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written by

Benjamin Rush

Please ye we can explain the Pain
in ye w: is felt sooner & more in y^e^
Head in Fever than in other parts viz:
from ye Blood's rushing more impetuously
into it on ye Acc^t^ of its direct situation to ye Heart.
2dly upon the Diffirent states of ye Blood.
in the circulating System, so that if
one portion Obstructed. the Blood will run
ye w: greater velocity in others.
3dly upon a Stimulus applied to particular
parts or relaxing powers applied to
them. As is finished what I had to say
upon the Doctrine of proximate Causes.
the Remote Causes or potentia nocens
ought to come next, but I shall pass
them over, as they will come in better in y^e^
Methodus Medendi

We come then to treat of the III part of our Pathology viz: of Symptoms. For a Definition of Symptom recollect w: was said formerly. They have been divided into Several Classes, but we shall reduce them all to two w: are called "Actiones Lasæ" and these I shall consider on a General plan. I shall in treating upon these Actions follow the Ordinary Division of the Functions in 1 Vital 2 Natural & 3: Animal

The Vital are those w: are more Essentially necessary to Life, & the wont w: Life cannot subsist.

The Natural are necessary to y Subsport of Life but not so much so as y Vital. They

are employed in supporting the Form &
Fabric of the Body.

The Animal are those Functions w^ch
have, & dispose them to act on Bodies
& to be acted on by them. or in other
words they are the Organs of Sense & Motion
& are common to all Animals as well
as man.

we shall begin wth the last, & 1st we
shall treat of the Symptoms of Sense, or
of morbid Sensations. the first & chief of
these is Pain & Anxiety. these are ye most
general & important of any of the Pathol^y
we shall begin wth the first.

Pain. this is a Simple Sensation &

Therefore cannot be defined. Those Sensa-
tions Gen. "Molumnes non affici" are
said to be painful. They may be divided
into 1 Disagreable 2 Uneasy & 3 pain-
ful. The Disagreable are ye Tristia Jenera-
tiones wch arise from the Quality of other
Bodies such as Colour &c. Sonor &c. or from
those Sensations wch we receive from ye four
Organs of Sense. Seeing. Hear: Smelling & Taste.
The uneasy & painful are distinguished
from ye Disagreable by being referred
to a Sensation wch exists in our own Bodies.
The uneasy are more or less vague & not
limited to any One place such as Confusion
in the Head - Obstruction in ye Breast &

Weariness in the Limbs.

The painful Sensations are always restric-
-ted to one part sometimes to a very
small part & seldom occupie a large
Space. Uneasiness arises from a sense
of Difficulty in ye Exercise of our Func-
-tions. Pain arising from Circumstances wch accompany
Causes wch produce a Difficulty in ye Exercise
of our Functions. This is all we can
say on the Distinction of Pain, for a
more precise Meaning of it I must re-
-fer You to common Experience.

Let us now enquire into its Cause.
It depends on the Condition of the
part to wch we refer the Sensation wch

depending upon some Actual Cause of Exciting it.

Dr Gerdius Lusfpoies § 674 that there are imaginary pains. but in this kind of pain taken. we cannot have the Idea of pain renewed in our Memories. ~~without the~~ ~~Perception renewed~~. the Ideas of wch we acquire by Smell & Taste cannot be renewed by the Memory. Pain appears to be an Idea of the same nature & happy for us it is so, as indeed much of the Happiness of Life depends on it. we can renew upon our Memories by certain Means of Association disagreable Sensations wch we formerly felt, but we never can renew that precise Sensation we felt

(a) The pain felt in an amputated Limb depends upon an Error in Reference, & not upon an Affection of the Limb itself, or upon any Change induced in the Brain.

in Pain Merely by the Force of Imagination.
— If ever the Memory of Pain is renewed
in Sleep or at any other time it must
be Only by means of certain Subitaney
Signs. if ever we dream of feeling Pain
a real Pain must attend there as
a real Pain must attend there as
repeated Experience has often taught me
w: Regard to the Tooth-Ach. (a)

what is the Condition of the part w: pro=
=duces Pain? — Every Impression of a certain
Degree of Strength gives Pain. The Force of
Light sometimes brings on a Pain in the
Eyes. Intensity of Sound likewise often
occasions Pain in the Ears. But both
these Impressions may be reduced to the

Sense of Touch as the Eyes and Ears are affected w: them in Consequence of the being Organs of Touch as well as Organs of Vision & Hearing.

Pain ~~Sensations~~ depends on the following Causes. external or internal to our bodies. Something may add every Species. To this we may add every figure or Extension of any ~~part~~ constituent part of the System. Physiologists have spoke only of Extension from their Theory of Pain's depending on a Tendency to a Solution of Continuity, but every mode of pressure may be considered as the Cause of Pain also.

Pain may likewise depend on sharp Bodies tending to cut Nerves in Pieces or when Corrosive Bodies w: act to

destroy the Texture of the Nerves.

Heat & Cold in Excess may likewise be considerd as Causes of Pain. How do they operate? by eroding or pressing the Nerves? - I shall not answer this Qt.

- But there are Sensations w: are ambiguous between painful & uneasy Sensations. such as Hunger-Thirst. Pruritus &c of w: we shall say more hereafter.

All the Causes of Pain may be reduced to things w: tend to a Solution of Continuity except pressure & Cold, & these appear to act by urging the Nervous Power upon the Sensorium.

Intense pain of all kinds appears to depend on 1 Distention. 2 Irritancy

Car / or the Gnawing of a Dog.

It is from hence that we have certain
Intestinal Lystem, the 2nd in the
of Bones,
Jewellings &c & the 3d in the Ligament: Canal.

— No Judgement can be formed of ye Cause of the
internal pain from the Similarity of it w:
external pain arising from external Causes. the
Pain in the Gout resembles a pain ex:
cited by some boring Instrument, while it depends
upon nothing else but Fluids overdistending
nervous Fibres. —— But there are pains
from internal & external w: have a greater
Relation to each Other, & yet there is not
the least Resemblance in ye Causes which
excite them. this depends upon a Subtility
in ye we cannot explain.

Q: Does the Degree of Pain depend on?

Either upon 1st the Force of Impression

or 2nd upon the Sensibility of the Part

affected. Dr Gerbius supposes its

Degree is always proportioned to the

Danger w: w: it threatens the System.

But this is not true. for in Cases of Great

Sensibility in particular parts we

have the most exquisite Pain w: little

or no Danger. The Degree of Pain then

will depend chiefly upon the Sensation

of the part, how far the Force of Im

=pression may influence the Degree of Pain

I shall not enquire here.

Anxiety

We come to speak of Anxiety. all
Bodies act either externally upon the Nervous
System. wch proves a fruitful source of
Impressions but there may be Impressions
without our being able to refer to the
place where the Pain is seated or the
Cause wch excites it. Pain depends upon
Impressions external to the Nervous System.
- the "Molesta Sensationes" belong to the last
kind of Impressions wch I shall distinguish
by the name of Uneasiness instead of Anx-
-iety wch I think includes too much. To
Pain is attended wi Aversion & an Effort to re-
-move its Cause, whereas Uneasiness is attended

th
w: but random Efforts to remove it &
such as Jactatio. or Restlessness and
Inquietude. But there are certain
Sensations w: do not rank w: painful
or uneasy. such as the Apprehension of Dan-
-ger Thirst &c. Let us now enumerate
the various Species of Uneasiness. The
chief Example of it is in Sensation w:
arises from the Nervous System universally
~~affected~~ considered. When it is in a prosper
State Calamity Gaiety Complacence &
Courage ensued, but when it is in a
contrary State Wrongness. Illness Fear
-Hesitation. Irresolution. Doubt &
Despair always ensued in a higher

or lower Degree. This is general called
Lower Spirits, & differs you see conside:
:rably in Degree. You may easily know
the Causes of these Sensations from w: was
formerly laid on the Laws of y Nervous
System.
1 Species is Interrupt: in Thinking
2nd Uneasiness from difficult Respiration
called an Asphyxion or y Breast.
3: Uneasiness from y difficult Action of
the Heart depending on a weakness
of the Heart itself or Resistance to its
ready & free Evacuation. It is impossible
to distinguish when the One or the other
of these take place. Syncope depends

upon the first. The last Genus is

Cases of Polypi.

1st Species arises from an internal

action of the Stomach, occasioning what

is called "Cupitudo". This Species of Uneas-

-iness occurs more frequently than any of the

Rest from its Connection with every part

of the System. On which Condition does Uneas-

-iness depend when it arises from the

Stomach? This Subject is involved in

Darkness. Mere Debility is often

attended with a Sense of Uneasiness. The

Anxiety of Hypochondriasis is to be refer-

-ed to this Source. But it may arise

also from a Sense of Resistance to its

Irritation such as a constriction ony
Pylorus & most fruitful
source of Uneasiness in the Stomach.
The Pylorus from its situation is very
liable to these Constrictions. The Conse-
quence of this is a weakness & Inversion
of the Peristaltic Motion of y Stomach
& Intestines. By forcing the Stomach
it squeezes out the Gastric Juice w: is
thrown up & constitutes the Cardial-
gia Flatulatoria. vomiting depends upon
a Constriction of the Pylorus especially
when it arises from the Fulness of the
Stomach. How is the Stomach affected
in Syncope & in y Beginning of Fever?
Is the Pylorus Constricted here? J

shall not answer this Question, but
leave it to You. I think the State of the
Pylorus should be more enquired into
in teching for ye Causes of Diseases in
the Stomach. But Again Uneasiness
in the Stomach will depend upon a
Difficulty of the Blood; Transmission thro
the Stomach, or upon ye greater or Lesser
Fulness of its Blood Vessels. There are there-
fore 4 of the principal species of Uneasiness. There
may be Others, but we have not time
to point them Out. These 4 occur most
frequently more especially in Fevers. all
Uneasiness is Sedative wth Regard to y^e
System it induces a general Debility upon
it. If it is not so strong as to destroy

the System it afterwards proves Injurious
lating. & produces an Effort of y Systems
to relieve itself.

We come now to Speak of the
Systems of the Intellect: & Faculties.
- These are Subject to great Interrup-
-tions & Irregularities. The first instance
of this is a want of Sensibility to those
Impressions w: are designed to excite
Reflexe Sensations. In Infants this is cal-
-led Idiotism or Fatuity. When y Mind
is unable to Mark the Relation of Ideas
a Loss of Memory is induced w: occurs in
old age. The causes of these are doubly
involved in Obscurity. & I shall therefore

forbear enquiring into them. We shall
Next consider the Irregularity of our
Intellectual Faculties. they are of 3 Kinds
1 False Perception 2 False Deductions
or Reasonings 3 False or unmeasured
Volition.

1 All our Ideas arise from Impression.
- When that arises from a present Im=
=pression it is called Sensation. Here is a Diffe=
=rence between Sensation & the mere Renewal
of an Idea. Now when Objects are presen=
=ted to y^e Mind wch we Absent from it we
call it false Imagination, or a Species of
y^e irregular Exercise of our Faculties.
2nd False Reasoning. the Renewal of Ideas
depends upon certain Laws in their Succe=

-tion. This Association is y Faculty of
Memory, but it may be in various
conditions: it is naturally founded on
the Relation of things. Every man forms
a Sett of Associations himself, & Others too
which are common to the rest of Man-
=kind. How false Reasoning arises from
y Mind; not properly Marking those
Associations or Reasonings w: are Obser-
=ved by every Body around him.

3.ro False or unmeasured Volition our Actions
ought always to be Deduced from our
Reasonings, & sh: be adjusted to the
Relations of things as commonly
perceived. Thus is y a Standard

th
w: Regard to our Desires & Aversions, &
ch
w: differ a little in diffrent Countries but
is upon the whole nearly ye same all
over the world. an Excess then in ei:
ther of these constitutes madness. if a
man is angry at a person who never
offended him he is said to be mad.
- or if a Man fears when there is no
occasion for it he is also mad. how
then we see unmeasured or false
volitions. all ye Cases of madness
may be referred to One of these Heads.

Let us now take notice of Madness
as joined w: th Fever. the word Delirium
has been employed to signifie this

kind of madness. There are two kinds
of Delirium ; Depending on the
encreased Impetus of the Blood in
the Brain.
2.nd Upon a deminished Excitement or
some Resistance in the Action of the
Brain.
1.st The Case of Phrenitis belongs to this
Head. It is always attended w.th Delir-
:um & depends on an encreased Impe-
:tus of the Blood in the Brain. But it may
occur in the hot Fitt of Fevers. in this
Case it likewise depends on encreased
Impetus as the full Pulse - inflamed Eyes
- throbbing temporal Arteries, &

encreased Sensibility of the Eyes & Ears
all sufficiently indicate.

2nd We have undoubted proofs of Delirium
arising from this second Cause. We
often find it in Continual Fevers when
y Vigour of the hot Fits decline, and
attended w: th: some of those Symptoms we
last mentioned of encreased Irritation.

It is moreover cured by Stimulat: Medi-
cines w: is the Reverse of the former.

Furor is generally employed as a Chara-
teristick of Delirium but it accordg
to this Mach of
we the first is not always present in
the first nor Absent in the last, there-
fore we shall not include it in our Idea
of Delirium.

of Madness wthout Fever.

we shall call it Insania.

Insania is of two kinds 1: it is
attended w: a false Reasoning w Regard
to One Subject only. 2: when the In:
-coherence is general w Regard to all
Subjects. this kind is Generally called Ma-
=nia the 1: Melancholia, but improp:
=ly as it is often attended w: a contrary
Temper of mind to Despondency viz:
w: foolish Visionary Hopes. 2nd Mania
admits under a variety of Forms w:
It is not necessary to distinguish into
different Species.

What is the Proximate Cause of

Delirium? This Subject is involved
in Obscurity upon y^e^ hea^d^ of ye abstruse
nature of the nervous System. I shall
however Attempt it. In One Case of
Delirium it depends upon encreased
Impetus, but this does not solely. violent
Exercise often brings on this encreased Impe-
tus & yet no Delirium attends. encreased
Impetus alone then will not acc^t^ for De-
lirium. a Resistance then to ye Brain
Action must always take place. So that
both kinds of Delirium we have spoke
of depend more or less upon ye same
Cause. — It is difficult to conceive how

these mixed Causes operate, but we
have an Analogy to it in y Operation of
Narcoties: they are both Sedative &
Stimulating, & it is only When they act
in this Manner that Delirium hap-
-pens. a Person just waking from
Sleep is in this delirious Situation from
the Sensorium being under y mixed
powers of both the Causes we have spo-
-ken. When a Man dreams his
Brain is in this half excited state.
They can only happen in those Cases
where some Stimulus excites part of
the Brain, but from another part be-
-ing unexcited, a Confusion of Thought

× They differ from Delirium in this resp.
as y Brain is in a less excited State than in
Delirium or Madness. —

(a) Men whose Imaginations make
sudden Transitions from One thing to Another
& thus become witty are in One of these
Situations, the Brain is in a too highly
excited State. hence the Poet justly said
"a great wit & madness nearly are allied"

arises. now Dreams & Deliriums are ex=
actly analagous to each other. in the
Delirium the Brain appears to be in the
same State as in Dreams. Delirium and
Dreams come on in y same manner.
But further the Diseased Brains of Maniacs
show its Organic affections w:ch strongly
confirm the Doctrine we have advanced.
But an Excess of Excitement as well as a
want of it tends to bring on Mania.
Hence Maniacs live so long w:out Sleep
& bear Cold & Sedative Impressions so well.
an unequal Excitement of y Sensorium
brings on Madness as well as an Excess
of it. (a) This State of Excitement we said

depend upon an Excess of Tension, but
this will not Account for madness or Deli-
rium wout Fever. What Other Causes then
cooperate to give this unequl Excite-
ment in Madness? the Nerves may be
in Fault, as Organs of Sense & motion.
- the Nerves wd formerly said convey the
Secreted Nutriment, how their different
Conditions may depend upon their being
more or less moistned wth Nutritious
Matter. This Conjecture Seems to be Ja-
vour'd by our finding the Brains of
Maniacs always dryer & harder than
is Natural. Dr. Buchel at Berlin
found the Specific Gravity of ye Brain

of Maniacs considerably encreased.

Fatuity depends upon the Reverse
Causes of Madness viz: too great Flacci-
-dity & Humidity of the Brain Nerves.
&
w: unfits them to propagate Brilla-
-tions. The Fatuity of Infants evident-
-ly depends upon this Cause. Dissections
likewise support this Doctrine. Morgagni
& other Dissectors have found the Brains
of Idiots always preternaturally soft.

(a This may be subdivided into
two kinds 1 when the Sensorium is
not affected, & 2 when the Sensori: m.
affected w th stupor. the first has been
called by Authors Convulsion strictly
speaking. the 2: nd Epilepsy. the Hysteri-
may likewise be brot under this head.

The moving Powers may be divided into two kinds as consisting in Loss of Motion & 2nd in want of Motion.

Spasm belongs to the first. This may be divided into two kinds. 1st as Alternating with Relaxation 2d is called Convulsion or Motus Clonicus. 2 Spasm 2d Does not Alternate with Relaxation. 1st Continuation Subsists in One Muscle for a considerable time. This is properly called Spasm or Motus Tonicus.

The Causes of Spasm & Convulsion are nearly the same often mixed. I shall them to you before When treating on Irritability. They may depend

1st upon the Form of Impression - have any stimuli a specific power of inducing Convulsions? I believe not. It would however be of use to consider the very different manner in wch stimuli operate. wch are direct or indirect? wch act from any Force of Impression & wch act from other Circumstances joining wth them.

2nd upon encreased Irritability depend: on a Mobility of ye Nervous Power.

3rd upon encreased Irritability. Fevers especially Those of the Inflammat: kind depend upon this Cause. Dr Gardiner very justly ascribes Leanness to it likewise.

4th upon a Mobility depending upon a Want of Tension. This Cause is ye Reverse

of the former, & is indued by a want of
Energy in the Sensorium.

5: Upon those causes wch disturb & establish
Order of our Actions. our System is Sub-
-ject to Habits wch determine ye velocity
of all our Motions. any cause then
wch disturbs the Series or Train of our
Motions may bring on Convulsions
perhaps the first cause we assigned
viz the Force of Imprssion may act in
this way? — be Attentive Persons
who when they first learn to play
on ye Guitar Flute &c wch
Convulsions in their Fingers from
moving them perfectly Ordinary.

The Defect of Motion may depend
upon the following Causes.

1 Various Organic Affections of the
Muscles preventing their Contraction.
Such as over Distention with Fluids.

2nd: upon Affections of the Nerves
Fibres alone or upon Atonia.

3: upon an Interruption of the Nervous
Influx from the Sensorium into the
Muscles. These two last are only
properly to be called Paly. the first
case may be called Simple Atonia as
the Muscles & Sensorium are seldom
affected in it.

I shall confine myself only to the
Last Cause, which ~~admits of~~ may be
reduced to two Heads, as depending
1st upon Causes external w.h interrupt
the Influx of the Nervous Power or
2nd upon deminished Excitement.
The 1st viz Compression may depend
on extraneous Bodies — Effusions
of the Brain — Tumors — a Plenitude
of the Blood Vessels of the Brain — Fluids
effused from Ruptures — Regurgitat.n of
Nervous System — encreased Exhalations
— Tumors found but &c. — Plenit.
=nitude of the Vessels induces it most frequ.
=ly especially when in the Nervous System.

This Directions sufficiently confirm.
Apoplexy in all its Degrees arises
from this Cause.

2 Diminished Excitement - It is hard to
tell when this is in Excess or Defect.
we are sure that Cold - Narcotics
& some Astringent - Depletion & all
act by inducing a diminish'd Excite-
-ment or Atonia in the moving Fibres.

Of the Symptoms of Respiration

We come now to treat of the Symptoms of Respiration, or of those Causes which render it difficult. The Subject is very extensive, & upon that Acc: I have chose to give you all the Causes in a Synoptical or Tabular Form.

Inspiratio fit difficilis

I. Ex vitio Aeris
   1 Nimis rari
   2 Nimis calidi

II. Ex Angustia viarum per quas Aer intrare debet.
   Angina varia Class: VIII. G: X Sauvage
   Orthopnoea a deglutitis G: IX Sp: 9
   _____ a Bronchocele 10
   _____ variolosa 24

III. Ex vitio Thoracis
   1 Male Conformato

III Ex vitio Thoracis

— Dyspnoea Rachitica G: VII. Sp 10

— Lordosis a gibbo G: VIII Sp: 9

2 Casu

A Luxatione } Dyspnoea traumatica 15
B Fractura }
C Ancylosi } Orthopnoea traumatica 16

3 Sine Dolore motum negantis

Dyspnoea traumatica

Pleuritis.

Pleurodyne

IV. Ex vitio musculorum Inspirationi famulantium.

Dyspnoea traumatica 15

Orthopnoea traumatica 16

Dyspnoea Scorbutica 22.

Dyspnoea Galenica 17.

Dyspnoea ab Hydrocephalo 23

V. Ex vitio Pulmonis

1 Rigidi

V. Vitia Pulmonis

1 Dyspnoea Rachitica 10.

2 Spasmo constricti

A Ab aere frigido.

B Ab aere inquinato /

Asthma Metallicum 12

Asthma a vaporibus 16

C Ab Irritabilitate

2 Asthma Idiopathicum

Asthma Humidum 1

——— Convulsivum 2.

b. Asthma Sympathicum

Asthma Hystericum 3.

Orthopnoea Hysterica

Asthma Hypochondriacum 4

——— Stomachicum 8.

——— Convulsivum Boerh. 19

Orthopnoea ab Antipathia 15

Asthma Artificiosum 5

V ex vitio Pulmonis

2 G. C Asthma Hæmatticum 11

——— Juvenum 14

Orthopnœa febricosa 20

——— a Vermibus 17.

3 a Matrice Declusi

A Sanguine

Peripneumonia.

Hæmoptoe

Asthma pleuriticum 15

Orthopnœa Peripneumonica 1

— Pseudo-Peripneumonica 21.

Asthma a Polypo Cordis 6.

Orthopnœa Cardiaca 2

B. Sero

Dyspnœa pituitosa 1.

Asthma Cachecticum 13.

Inspiratio fit difficilis.

V a vitio Pulmonis

B. Arthropnœa ab Hydropneumonia 12.

C Nisus

— Asthma Catarrhale 16.

—— Pneumodes 17.

D Aere

Dyspnœa. a Pneumatica 12

E Pure

Orthopnœa a vomica 7.

Phthisis pulmonalis

F Calculis

Dyspnœa calculosa 3

G Pulvere

— Asthma Pulverulentorum 7

H Tumore

Dyspnœa a Tuberculis 2

ab Hydatidibus 4

V Ex vitio Pulmonis

H – a Steatomatibus 5`

— a Vomica. 6

VI Ex Pulmone compressa

1. a Causis intra Thoracem

Dyspnoea a Corde 11.

Orthopnoea ab Aneurismate 8

——— a Pinguedine 6

——— a Lipomate 18

——— a Hydrothorace 5`

——— ab Empriemate 13

Dyspnoea traumatica 15

2 a Causis in Abdomine existentibus

Dyspnoea a Phiscomia 7. or enor: Buck

—— a Graviditate 8.

—— a tympanitica 9

—— a Stomacho 13.

—— a Liene 14.

Inspiratio sit difficilis 490

VI Dr Pulmone comprepa.

2 a Gastrocele 18

Orthropnœa Gastrocele 11

Asthma Hypocondriacum 18.

I Dr Aeris vitio. very few Diseases
arise from this Source. I think Dr Gaubius
has been too diffusive upon this Subject. It
II Dr Angustia pectoris per quas Aer
intrare debet.
all the diseases marked under this
Head are rather Symptoms of Diseases
than any thing else. They often occur in
Cases where Little Danger is to be apprehended.
Sauvage has considered some of them as
Diseases of y Lungs especially the last,
but they depend upon nothing else

Cuta narrowneſs of the paſſage thro w:
in th? paſs.

III. ꝛ th? Thoracis, w: may be either
congenial, or produced ſhortly after Birth.
or 2.ly may ariſe from Occaſional Læſions, or
3 ꝛ may ariſe from pain restraining
the Muſcles w: ſhould move y Thorax. to
theſe we might have added ꝛ a difficult
Inſpiration from Decubitu w: may be
ſo't on by 3 Cauſes 1: an Affection of
one Side of the Lungs w prevents their
being properly exercised 2.ly from a vomica
or water's being accumulated on one ſide.
3.ly from the Lungs being compreſſed by water
in the Abdomen, & therefore unable to
dilate themſelves in Bed. the Inſpiratio
difficilis from y Poſture of y Body might

have been lost under this Head.

IV. Of vitio musculorum Inspirationi
sommillantium.

This often takes place in Luxury & Luxury Fevers
the Muscles being rendered paralytic by
increased Circulation of the Blood, or
by Pains resembling the Rheumatic,
or by the Globus Hystericus with Fœcal Con-
:stipation take notice of in the Luxury.

The Dyspnœa Galenica happens in Con-
:sequence & setting the Phrenic Nerve in y:
Way of Experiment. But I have seen
it occur from other Causes. The Dyspnœa
Asphyctica might have come under
this Head as depending in some Measure
upon this Cause. —

Vox Vitia Thoracis. The chief Cases of difficult Respiration are to be reduced to this Head, as they are y most general primary Affections of the Lungs.

1 Rigidity of the Lungs. This may include besides those we have mentioned Obstructions of the Bronchia. Morgagni &c Bonetus give us several Instances of it.

2 Spasm - This is a frequent Cause of difficult Inspiration. The Cartilages Lessening Inspiration are liable to Spasm. This Spasm may depend on particular Stimuli applied to y 2 muscles Lessening Inspiration or upon a general Affection of the Nervous System wch disposes it to these Spasmodic Strictures.

The Asthma Metallicorum is too general.

2. The Action of Sulphur is to be reduced to this Head, but it rather belongs to those Irritating Substances which induce Spasm on y Lungs, or destroy y Irritability of the Nervous Power. for the ♁ & the Mephitic Air w: the ♃ carry on w: it Act in this way. ——

The Asthma Stomachicum deserves our Notice. For Asthma comes on w: out affecting the Stomach first. This Inflammation depends upon a Stricture of y Pylorus.

Orthopnoea ab Anti hathico very impro-per. it would better to say a Asthmatic for we often see Dyspnoea brot on by Passions of the Mind. &c

Irregular motions brót on by Fedors or
things of y^t kind are most apt to show
themselves upon the Lungs.

The Asthma Arthriticum is a common
Disease, but does not depend on a
Metastasis of morbific Matter, but on
ye Equilibri: m of ye Nervous System being
destroyed.

The Asthma Hæmatheticum. the Asth:
:ma brot on in Consequence of Ulcer being
dried up may be reduced to the Head. It
does depend on morbific matter stimu:
-lating the Lungs, but on ye same Cause
as the Asthma Arthriticum.

The Asthma Venereum very seldom

occurs. I know of no Author who has described it. Levange pretends to have discovered it some Where, but Junker says no More than that if such a Symptom should occur it must be cured th w: Perennials in y usual way.

Carthrospora Febricosa. Every thing in y Lungs Blood too quickly to y Lungs brings on Dyspnoea. But it occurs too in the cold Fitt of Fevers from (not a Congestion of Blood in y Lungs) but a Stricture on y Capillaries of the Lungs.

——— a Vermibus. This is evidently Symptomatic & requires no Explanation

3: The Matters w: by filling y Lungs

occasions difficult Inspirations are very various.

Sanguinis. This may act either by being congested in the proper vessels or effused into the Bronchia. the first of these Causes Affects all quickened Inspiration may be called difficult Inspiration, & generally arises from an excessive Quantity of Blood in the Lungs. the difficulty of Breathing in Fevers depends on this Cause from Blood being poured too plentifully into y Lungs. — the Inflam.r & Hæmorrhagic Diath.: :tis gives a particular Determination of Blood to the Lungs. ——

The Asthma Plethoricum attends generally all plethoric Persons.

The Orthopnoea Peripneumonica. is nothing else but an improper species of ℔ Catarrhus suffocativus.

The Orthopnoea Pseudoperipneumonica is ℔ Peripneumonia notha of Sydenham & Boerhaave. It is nothing but a Catarrh or a Congestion of Blood w:ch is greater than ℔ Stimulus w:ch induces it.

Dyspnoea a Calculis depend generally upon Calcarious Earth, at least all ℔ Stones I have examined are of this kind.

The Dyspnœa a Pulvere . is a real Dis-
ease: The Flax Dressers are most subject to
it. It is somewhat surprising y: Millers
are not subject to it. perhaps it may
be owing to y Flower being less offensive
to the Lungs. The Millers Cough
proverbial - owing to Cold
Burdens &c - Hair Dressers
who live among Flour
not subject to it.

Symptoms of the Heart' action.

The Consideration of the Pulse naturally comprehends every thing relative to the Heart' Action.

I shall consider the Frequency of the Pulse, & confine myself to those which are most commonly marked. But here we must premise that ye same causes y^t always excite both Ventricles of ye Heart at once, & y^t the Action of ye Heart depends upon its Irritability. This Irritability may be considered as a "vis Insita" or as depending upon the Sensorium. I do not suppose the first can be independant of the last as Dr Haller has done, but shall assume it at present Meaning by it those Causes wch act on ye Heart

directly
it will or upon the Sensorium first &
indirectly upon the Heart.

The Causes acting upon ye Heart directly
are 1: an Influx of Venous Blood.
2 More or less Evacuation of ye ven: Blood.
3 The different states of Irritability.
4 Unusual Stimuli applied directly
to the Heart itself.

The Causes acting on ye Sensorium
may be reduced to ye following
1 Direct & 2 Indirect Stimuli.

In
1: we shall consider the Causes w
act directly on ye Heart

1: what ever encreases the Influx of
the Venous Blood beyond w is ordinary

will encrease the Pulse. Muscular
Motion will produce this Effect, as also
a frequent Respiration wch is ye most com:
:mon Cause of a quick Pulse. If the Size of
ye Sanguifer: System is ~~not~~ over propor:
:tioned to ye Heart's Magnitude a quick
Pulse will be produced. This is ye Case
wth Infants hence ye Frequency of y^r
Pulse.

2 Imperfect Evacuation of ye Heart's
Ventricles will produce a Frequency
of Pulse, as ye Heart's Contraction always
continues the same. This Imperfect Evac:
:uation arises from 2 Causes 1 a Weak:
:ness of ye Ventricles of ye Heart. This often

vi

in all Cases of great Debility as in Deliqui-
:um Animi, or in dying Persons. hence
we always find a frequent pulse just
before Death, unless from some Cause
y Insensibility of the Heart has been
destroyed. or it may arise 2dly from
a Resistance in the Blood: vessels de-
:pending on Aneurism Polypus Obstru-
:ctions & Spasmodic Affections of the
whole Arterial System. the Pulmon:y
Artery is affected by every thing wch renders
Respiration quick or difficult. so that y:
Blood: Course is more apt to be quickned
in the Lungs than in y rest Arterial
System.
3 Increased Irritability may

encrease the Heart's Actions — This
will depend 1st upon encreased Sensibility
in the whole System. Hence y Frequency
& Pulse in Infants & Females.
2 upon general Atonia & Debility which
gives Irritability & Irritability
1st: Unusual Stimuli of y direct kind have
been supposed to encrease the Heart's Action.
Physiologists have called in ~~Heat~~, Heat, or
a Specific Animal: in the Blood as direct
Stimuli to the Heart. But this is wont
Foundation from y Heart's Insensibility
to them both, & from y power of Habit
rendering them ineffectual. what are
y unusual Stimuli which act on y Heart?
These are fewer than have been supposed,

as appears from Dr Smith's Experiments.

- we are often sure of an acrimony circulating in ye blood, & yet no quick-
-ness of Pulse attends it, as in Cases of
Scheurica Jaundice &c Jaundice &c.
Mercury Antimony & Arsenic are powerful
Stimulants, & yet when received in y^e^
blood never affect the Heart directly.
if they ever do affect it, it is indirectly
by Stimulat: the Stomach or some of y^e^
Intestines. What has been said here
applies still more to the Arteries. if
there are any direct Stimuli it must be
ye Sedative Impressions sent on these
act on ye Sensorium first & indirectly

on ye Heart.

Let us now consider the Causes which act on ye Heart by ye Intervention of the Sensorium. these are Stimuli of a direct or indirect nature. the 1st are originally Stimulating; the last are at first Sedative but prove Stimulating afterwards. the 1st of these prove ye most frequent Cause of ye Quickness of ye Pulse such as Fevers &c.

What does Irregularity of ye Pulse de-
:pend on? or Pulsations not succeeding each other at proper Intervals? this is called Palpitation of Heart. it requires no Answer from us: has been said by Dr Gardiner & Ch.

Having considered the velocity of ye Pulse

let us now attend to ~~[illegible]~~ its

Hardness Softness Fulness &c

It is very difficult to tell precisely

when each of these take place. Some

have Confounded a Distinction between

a quick & a frequent pulse, but I

have never been able to perceive

it so accurately as to speak of it w^th^

Certainty. I always judge of ye Frequency

of a Pulse by its Suddenness. the blood

has a lateral & progressive Motion. now

in ye Sudden pulse we feel ye Lateral

stroke only wch is known by its being

pointed & accuminated. It is common
by distinguished by Surgeons by y name
of a Jerk in the Pulse, & is generally
opposed to y: is called y undose Pulse
in w: y progressive motion is evidently
perceived. You must consult your
own experience for a more accurate
knowl of these Distinctions.

The full & strong Pulse are often
united. the full Pulse depends not on
more Blood evacuated from y Heart
but upon Resistance in y Course of the
Blood. this is evident from y full
Pulse w: follows Ligatures. this
lays a Foundation for a Distinction

between a full & strong Pulse. the
full pulse is generally slow & soft. the
strong for the most part hard & quick,
& gives a sense of Tension to ye Physicians
Hand. a strong hard pulse is always
a favourable Symptom in Fevers but it
is still more favourable if it is full only
without any great strength. a full pulse
Pulse does not always indicate a great
Quantity of the Blood in a Patient as
the Fulness of the Pulse is greatly in-
fluenced by the Size, Situation &c of the
Artery at the Wrist. the full Pulse
in Inflam^n: Tumor likewise depends
only upon a Resistance & not upon an
Increase of the Quantity of ye Blood or

of the Heart's Force.

The Hardness & Softness of ye Pulse depends upon ye Muscular Fibres of ye Arteries themselves. The first is owing to an Excess of Tension in ye Arteries. The last to a want of it. It is the greatest Desideratum in Medicine to know when ye Pulse is hard & Soft & w^h^ are all the intermediate degrees be-tween a hard & Soft Pulse. I conclude then that a 10,000 Circumstances vary the Pulse, & that nothing is more difficult than to form a regular Judgment of Diseases from it. I

think the different states of Equality & Ine:
quality of the Pulse w: indicate the state
of the system much better than the
Frequency of the Pulse. here I must
add that I have never observed
the nice states of the Pulse Solans
takes notice off. or if I have by accident
discovered any of them I have never
observed the critical Discharges follow
them that Solans talks off. perhaps
this may be entirely owing to our
Northern Climate in w: Fevers & other
Diseases observe less regular periods
than they do in warm Climates.

altho' I said before ye Consideration
of remote causes would come under
ye Methodus medendi, yet I think it
will be of use to treat of a few of them
in this place. The subject is very extensive
— but I shall confine myself only
to Air & Diet.

1st: we shall treat of ye Sensible Qua-
lities of the Air.

2^ndly^: we shall treat of ye Properties of
ye Air by wch I mean its Density Elas-
ticity &c.

3^rdly^: we shall take notice of ye Air as
impregnated wth foreign Bodies.

1st: Heat & Cold are very extensive in

their Operation, and act differently in dif-
ferent times even in the same Degrees.

Their Action is diversified 1st by their Degree of
Intensity as expressed by ye Thermometer in
as far as the Body is considered as
inanimate, or as a common Mixt. thus
are wch are called ye Absolute Effects of
Heat & Cold. But 2^ly they both operate
differently on an Animal Body viz
Relatively, i.e their Effects are pro-
portioned to ye generating powers of Heat
in the System. wch Degree of Heat gives
the Body its uniform natural Temper-
ament, or neither encreases or leases it? i.e
62° in this Climate. the Body always

remains at 98°: in this Temperature.
any thing beyond this encreases Heat
of my Body. any thing below 62°: lessens
the Heat of the Body. this may be very
different in warm Climates. but we
have no Experiments to determine this.

3d: The Effects of Heat & Cold are diversified
as acting on sentient Bodies, & hence
the Perception of them both are diversified
by the States of the sentient Extremities.

4th: But all we have said concerning
Effects of Cold will be diversified by them
acting differently on the Solids or Fluids.

5th: They will all be diversified by y power
of the System to resist or receive them

(a) Heat beyond ½ Ordinary Heat to the Body acts as a Stimulating Inflaming Impression, bringing on Blisters &c. if it should ever arrive at 150: the fluum W: be in Danger of being coagulated. —

# of Heat Absolutely considered.

respective Effects. —

we shall now speak in particular of the Effects of Heat &

&c
1: we shall speak of its Absolute Effects upon the Body. I formerly supposed there was a Subtile Fluid in ye Nerves

th
w: was under the Influence of Heat &
Cold. This Fluid is a portion of in:
animate Matter Heat therefore acts upon
it & gives it greater Elasticity &
th
Rarity w: induces Mobility in
general or Sensibility & Irritability as
far as it depends on Sensibility. (a)
2:do Absolute Heat gives Expansion to Fluids

Solids, w^ch^: induce Laxity - a want
of Tension, & in Consequence of these
Mobility & Irritability.

3dly Absolute Heat Expands our Fluids
as a Whole & expands them to a
greater Degree, & hence induces an
Incapacity in Fluidity, wch distresses them more
readily to expand the Solids.

4^thly^ Absolute Heat acts upon our Fluids
as Matter capable of intestine Motion.
i.e. Heating them Putrefaction, or the
Solution of a Saline Matter wch likewise
still further increases the Fluidity of
our Blood.

5^thly^ Absolute Heat proves a Stimulus

to y Nervous System, & by this means
accelerate the Circulation of y Fluids,
which shows its Effects on y Surface
of the Body, upon y Acc: of y Heats
being applied Originally there, as
well as upon y Acc: of y natural
Tendency of the Blood unto Circu-
lation to the Skin.

6th Absolute Heat as evolving a saline
Matter encreases its Natural Acrimony
w: Acrimony acts more in proportion to
its being concentrated. Heat dispates
y more fluid parts of the Blood & thus
encreases its Concentration. This Acc:
for y Acrimony of y Bile. [illegible] being

so much encreased in Summer time.

7ly: Absolute Heat shows considerable
Effects in Respiration. dense & cool
Air we know favours Respiration,
but a hot Air w: is always rare
& is always introduced in ye Quantity
& stands the Dilatation of ye Lungs more.
ye. Hence the Blood is more difficultly
transmitted thro the Lungs, & upon ye
Cessation of its Quicker Circulation in ye System it
is more apt to stagnate there.

But all these Absolute powers of Heat
have relative Effects on an animated
Body. Every Temperature of ye Air beyond
62° shows ye Absolute Effects of Heat,

Cant deminishes ye generating power
of ye Systum wch in Some measure
obviates the Absolute effects of Heat.
But a Degree of Heat below 62: ex-
:creases ye generating power of ye Body,
by wch means it is generally kept in
a uniform Temperature. Formerly
explained the Reason Why the Heat of
the Body is not encreased in proportion
to ye Heat of the external Atmosphere.
The Absolute power of Heat by rendering
the Other of our Juices too rare prevents
those strong Brillations on wch Animal
Heat depends. we have a beautiful
Analogy of Something of ye same kind
taking place in a Globe of Sulphur

ch
W: accumulates & retains the Electric fluid
only in a certain State of Density. the
Moment we under it fluid it looses
its Electric matter.

Our Sensations of Heat are greatly
diversified by the State of our Bodies.
Thus if I take 3 Vessels each of them
filled w: water One of 60: another
of 50: & the third of 70: if I put my
hand if the Vessel of 70: & then put it
into the One of 50: I feel an evident
Coldness, & vice versa if I plunge it
first into the One of 50 & then in the Ves=
=sel of 70:

But the Absolute Degrees of Heat still continue to Operate, for the Effects of the Heat from 60° to 70°: are considerably greater than the Effects from 50°: to 60°: although the Sensations may be nearly the same.

The Effects of Heat are likewise diversified by the Ordinary Temperature of the Body. Thus a Change is agreable to the Body. Thus a Change from 50° to 60°: is scarcely perceived, but a Change from 60°: to 70°: is sensibly felt.

Heat is never a powerful or

painful Impression until it exerts its Absolute Effects. It is only a Degree of Heat Above 98°. that proves painful or Stimulating.

Heat generally acts unequally upon the System i.e more upon y Solids than the Solids inducing Expansion — Elasticity &c upon in them. hence Plethora; & Accumulations of Blood are more frequent in y Spring than at any other Season whon y Acti: of y: Heat not acting equably upon the System.

Heat acts diffirently upon Systems according to y Temperature they have —

Relative Heat

been accustomed to. Thus a man going
from our Climate to y West Indies is
more to be affected w: the Heat than a
Person born there, while a native of the
West Indies is more apt to be affected
w: Cold here than a native of Britain
— The Reason why Strangers are so subject
to y Yellow Fever in y West Indies may easi-
:ly be understood from this.

Let us now speak of y Absolute

Effects of Cold.

1 Absolute Cold condenses y Fibres of
our Nerves & thus lessens Sensibility &
Irritability.

2: It gives a firmer & more tenacious
:ple solid, w: gives more quick and

as $\frac{9}{10}$ of mankind live in a Degree
of Heat below 62°.

Strong Excitations w: in some measure
obviates the Insensibility induced by ye
Cold. it never links ye generating
power of Heat below 98°: no more
than Heat encreases it.

3: It condenses the Fluids & acts the
Reverse upon them to ye: we said of
Heat.

Dep. ... There are many means of obviating
the Effects of Cold in our System viz
... 1: It encreases the generating power
of Heat when applied in a certain de-
= gree:
2nd It is a powerful Stimulus & prompts
the System to exercise wch we know

(a) Not only so but it actually stimu-
: lates the System itself. This every
One must have experienced after
plunging their Hands in snow, or
very cold water. —

of Absolute Cold

abviates the Effects of Cold. [4]

3: Ly Generates Perspiration w: aids a warm Bath to the Body. This Atmos: sphere is confind by our Cloathing. y: Cloathing is warmest when w: receives & propagates Heat most Suches Woollen — the looser a Garment is the warmer as it confines more Atmosphere w: it. the Chinese all wear Garments of this kind lined w: Furr. Blankets are always warmer, the looser their Texture are. Our Houses likewise grow warm by confining Our Atmosphere. Hence a greater Number of People in a Chamber the warmer it becomes.

4: The Effects of Cold are Abviated by

Artificial Heat.

The Effects of Cold ~~not~~ independant
of its Acting as a Sensation are
1 To induce Contriction in all ye tissues
parts Such as ye Lungs, & sometimes
over
all the Surface of the Body. in this
Manner it often brings on Fever.
2: This Contriction determines ye Blood
more plentifully into the Viscera. dimi=
nishes Perspiration & encreases ye Urine,
as well as ye Perspiration from ye Lungs.
- It likewise determines ye Blood to
ye Joints, & hence the Cause of Rheu=
=matism.
3: Cold acts unequably upon ye System

Viz: condenses the Solids, While the
Fluids remain the same, or rather
are Often rarefied by the Heat generated
by the Stimulus of the Cold. from this
You will easily understand y Theory
of Inflam^{n}: in general & of Rheumatism
in part^{r} especially When y Cold is
applied to One part of the Body only.
But 5^{ly} the Effects of Absolute Cold are
diversified by the diffirent states of Excite-
ment in the Sensorium. Cold we know
tends to destroy y Mobility & Excitement
of the nervous Other, but from its Stimulus
it Often rather induces an Excitement
of y Sensorium than diminishes it accor-
ding to y diffirent States of the System. It

depends upon the nervous Ether being in different Capacities of being acted upon.

– I am sorry I am obliged to conclude this Subject so Abruptly, but I am ne= =cessarily called out of town. & as the reason is so far advanced I shall pro= =ceed next to the Methodus Medendi.

Methodus Medendi

This is either Empirical or Dogmatical
the 1st Regards no Indications nor does it
enquire into the Qualities of Medicines
the 2d: enquires into the Operation of
Medicines & the state of the Syst. in wch:
they are given. I am determined to
treat the Subject now under Consider:
ation in this last way, but shall deriv
all the principles I offer you from
Experience.

The Method: Med: has been divided into 4
parts 1 Conservatoria
2 Preservatoria
3 Curatoria
4 Mediicatoria.

The 1st Relates to the Preservation of ye
Powers of Life. It is sometimes called
Indicatio Vitalis
The 2d: consists in defending ye Body
agst the Action of the Potentia Noxen-
tes. This is likewise called Indicatio
Prophylactica.
The 3d consists in changing the Proxi-
mate Cause of a Disease so as to restore
the Body to Health.
The 4th: Is when we dont know the
Proximate Cause or cannot reach it.
in wch Cases we order palliative Remedies.

These Divisions of the Methodus Medendi
are unnecessary. The 3:d or Indicatio
Curatoria comprehends all ye rest &
I shall confine myself to it alone.
Most of our Systematic Writers lay down
general Rules in ye Medendi Methodus.
- in Imitation of these I shall deliver
a few w:^ch shall be very short & shall be
by the way of Structure on Dr Hoffman.
Rules.

His 1:^o Rule is to follow Nature. all
Physicians from Hippocrates to Sydenham

Methodus Medendi

& downwards have declaimed on this
subject. The System I grant easily
receives slight Deviations of its Ballance.
- many particulars might be brót in
Illustration of this w: you may recol:
:lect when we spoke of the Action of
Heat & Cold. - many remote Causes of
Diseases excite the System in such a
Manner as to remove themselves.
in a word then it appears very evident
:ly that there is a "vis Naturae Medica-
:trix" but still I say the powers of
Nature have been too much extended.

1 a/ This has arose from an Opinion
that the soul was diffused thro
the Body & surrounded all its
parts - This was Stahl's Notion - or
2: that the Deity directed it. - This
last too Absurd to need Refutation.
— The 1st is refuted by Dr Wyatt - &
supposes the Divisibility of the soul -
— likewise its being employed about
several things at the same time each
of w: are Absurd & contrary to all sound
Philosophy. — What then is Nature?
— The same in the human Body as
in the inanimate Parts of the World. —
— a conserving Property w: acts mechanically & possesses neither wisdom
— Power nor Goodness in the human
Body. The same in Vegetables as
in the human System. Trees yield to bird
& beast returns of sin - & then sprung
from their Growth &c

Methodus Medendi

The (a) Stahlians imagin the Soull acts in curing all Diseases, & do not suppose it depends upon the Mechanism of the Body. There are many Diseases in w: the Efforts of Nature do nothing such as Palsy. Apoplexies. Many Spasmodic Disorders - Lethargic &c. But the Efforts of Nature are often hurtful. every Stahlian (c) ans acknowledge that there "Anima Medica" commits Mistakes. Inquirers say then have talkd too extravagantly of the Powers of Nature. The progress

Those understand yt I believe all
Nature to be under the Administra-
tion of a Being infinitely Wise-
powerful & Good - But who will
overrule even practical as to
make it contribute to the gent.
Good of the Universe - But Evil
we have - we see it - we feel it -
in every Part of Nature - Storms
Thunder - Lightning Insects &c
are real Evils - all must confess
this - Altho' they are overruled as
on to contribute some ways to the
well Being of the World - To return
? enquire in w Diseases
Nature helps - very few - corrects
slight Deviations only - Fevers
takes away our Appetites - calls
for Drinks & light Aliment -
so wounds - from Shot Bodies

of Medicine in my Opinion has been much retarded by paying too much attention to Nature & by being too diffident of the powers of ~~Doctors~~ Art.

Dr Hoffman's 2nd Rule is to evacuate all Morbific Matters as soon as they are formed. This is a good Rule & strikes directly agt the former Axm, as it overthrows all the supposed notions concerning Concoction &c. His 3d Rule respects the last, & therefore deserves no Observation.

In all Fluids there are three Intestines or they are most used to circulate

Methodus Medendi.

Thro. thus ye watry of a Dropsy sh^d^ be
evacuated thro ye Kidneys or ye pores of y^e^
Skin.

See Dr Hoffman, Other
in his Works. they are most of them
so plain that they require no Explanation.

I shall now proceed to the
Cure of Diseases, & for y^r^ purpose
have given You a Table wch comprehends all ye Medicines used in
curing Diseases of the Solids & Fluids.

excites Inflam.n - In Rabies
Vomiting & a fun[illegible] -

Ll m w: She does no good - In
some we shall find inactive -
- some want Wisdom - Others
Power Others Goodness -

1 Inactive - small pox - no
Patient when Contagion is rec.d: -
- no Reputation &c - Thousands
many Fevers.

2 Wisdom - [redacted] Fevers - Dysentery
weakens the System -

3 Power - cannot often overcome
the cold Fitt of an Intermittent wout
proper Drinks &c.

4 Goodness - neglects to furnish us
in Youth for our Passes - Let
Sodom &c. warn us in Age. -

Indicationes Curatoriæ

I In Morbis Solidorum

1 Simplicium

A suppeditare materiem deficientem per

Nutrientia

B absumere superfluum per

Erodentia

C roborare laxam per

Astringentia

D laxare rigidam per

Emollientia

2 Motricium

A ciere Motum per

Stimulantia

B minuere motum per

Sedativa

C coercere Motum inordinatum per

Antispasmodica

II In Morbis Fluidorum

1 alterare vel immutare

A aggregationem

a Inspissam per

Alterantia

b tenuem per

Inspissantia

B misturam præsertim correctione Aeris

Shall now point out a few
Diseases in w. the Want of
one two or all these Appear.
1. Fevers - Nature exerts herself
only partially to Moriate Debility -
some Determinations to y Brain
Viscera & Bowels which bring on the
Worst of Consequences - In Intermitting
Fevers Frequency of Paroxysms instead of
Weakning Fits encrease y: m
in Obstructions - Dropsies &c - In
Nervous - Delirium or Insensibility
Nothing called for - In Inflam:
Nature tends to Suppur: & Gangrene
2 Plethora - Nature empties it -
Vent thro the Nose - Cut into the
Brain or Lungs. -
3 In Hypochondriacs Melancholia

2 Generatim per
Demulcentia
6 Specialim per
a Antacida
β Antalkalina
γ Antazumica

2 Evacuare

A Humorem unicum rempe
a Mucum
Errhina &c
b Salivam per
Sialagoga
c Urinam per
Diuretica
d Perspirabile per
Diuretica + Diaphoretica

Sanguinem per
a vias naturales per
Emmenagoga
β vias artificiales per
Phlebotomiam &c
F. Serum per
Vesicantia &c

B. Humorem vanum per
a Emetica
b Cathartica

– The Lady or to Solitude – Com:
= fancy & Amusement the only Cure.

4 In to great irritability or Inflam:
of the Stomach – Vomiting excited –
– Bleeding indicated – no Natural
Hemorrhage. – Antimetics necessary –

5 In Dysentery – Purging immoderate
– only to be checked by promoting
Evacuation –

6 In Palsies – Apoplexies – & all the
Pains of Nerves: Diseases – Nature
sensitive

7 In Haemoptoe – Consumption or
Pectoral ovarets Cure Purpose –
Cough retards instead of healing
the Cure.

Of supplying the System

Every Treatise of the Methodus Medendi has proceeded in this Way marking out particular Indications from the several Heads of the Causa proxima & reduce them to Classes from our systems of Pathology-

It is difficult & is far from coming near Perfection. Most Systematics tho they differ in Theory have agreed pretty nearly in this: & I only give mine as a Syllabus & not as proper. I have first made a Division into the Diseases of the Solids & the Fluids.

I begen by considering the Indication of the simple Solid. viz to supply defect in any Part. This is done by Nourish: ment. It is first applied to the Fluids & relates to both Solids & Fluids when deficient.

I shall not always be able to keep to this Plan & often we must consider the Matter employed before we can consider the contraindications.

With respect to Nutriment we know extremely little of the Theory of it applied to particulars. as the Animal's nourished by Grass another by other Animals. I shall consider what Experience has taught us with regard to the Matter. It is either vegetable, animal or of an intermediate Nature-

We are told Nature errs on two
sides only - Too Slow - or too Violent -
- not so - In the case supposed -
we must do the most humble
Minister of Nature does at diuty
in Opposition to Law - Who would
=de a Slave: required Abruptly
to Spin the Whip - Sometimes
to be turned round - Natural:
=ways to be distrusted - In Light
conf: may do - But Ne: ever
be subjected to Theory

I think the Vegetables may be divided into three Kinds
1 Sugard. 2 Farina'd 3 Oil-
Whether or not there is a 4th Class of mucilagenous Mat:
ter distinct from any of these may be an Enquiry, but
I think it may be reduced to one or other of the former
The Vegetable Matter is of great Diversity & I am perswa:
ded that many more Subjects contain alimentary Mat:
ter than what are in Use, as Woods, Barks &c & we only
reject soft Matter as connected with some deleterious prach.
I think the three Heads I have mention'd can include
every form we know of Aliment & to shall first
consider the one we are most acquainted with.
With regard to the Farina there is no Doubt of its being
an Aliment & is in the most general Use in all
Nations. Oil we know is often taken in but it may be
doubted if they dont only take it to moisten the solid
Parts more than to furnish a Nutriment but we take
it in such large Quantity & sometimes alone that I
think it must enter into the formation of Lymph a
Animal solid especially as we can find it in the form
of a Secretion & besides finding it in its Nature form
thus used, we find that it enters into the Composition
of the most common aliment viz the Farina.
With regard to Sugar the Doubt may be as considerable

as we dont find it employed alone as Nutriment, but
we often take it in great Quantity & besides this the Peo:
:ple in our Colonies are observed to become uncommonly
fat in the Sugar Season & we find it the principal Part
of Grasses. Figs & all such sacharine Fruits w^h are remar:
:kably nutritious especially when dried. Whole Nations
live on Dates & Figs, were long the Diet of the Athlets.
It is in great Quantity in all vegetables besides being
added as a Condument & especially the Farina contains
it in very large Proportion even prepared & can by a
Process almost entirely be converted & I am apt to
think that Farina is nutritious as it contains Sugar
& I imagine the true nutritious Matter is Sug^d uni:
:ted w^h Oil. We know that they do not unite in the
Body when not joined before they are taken in.
In this we should expect that the Degrees of Nutrition
of Vegetables should depend. From this a Scale of the
different Aliments may be formed.
1° Lowest I would put the succulent herbaceous plants
as Spinnage. 2^d succulent Roots, Turneps. 3 mucaceous
Fruits. 4 Cherries. 5th sacharine fruits, Grapes.
5 These Dried, Raisins. 6. Farinaceous Roots, Potatoes.
7 Pithy ^w^h we have only one, Sagoe. 8 Farinaceous
Seeds, Rice &c of a higher Degree than the Cerealia stand-
9 Leguminous Seeds, pease higher 10 Nuts of an oily Nature

Of Milk as an Aliment.

Almonds & lastly ye Pure Oil itself from the Olive as a Fruit & several Seeds.

The only Instance of an intermediate Aliment is Milk, it is Animal in some Measure, but is from the most immediately received vegetable Matter & from analysing it we find an Acid easily evolved of a fermentative Nature containing a great Deal of saccharine Matter & a great Deal of Oil is diffused in it & is the I think before their proper Union. It has also a great Quantity of Lymph united with it fully formed. In this intermediate Aliment we have also a Scale of Degree of Nutriment. If you separate the Oil from the Lymph, you have Serum nearly the lowest Step of the vegetable Aliment. A higher Degree is got from Whey taken from entire Milk. The serous & the coagulable Part in Butter'd milk gives another Degree & this depends on the Manner it is taken, as the Milk was previously deprived of its Cream or not then Milk itself, higher still Cream & still higher pure Butter. As the chief part is chiefly animal Lymph, it is the most nutritious of all especially if taken from entire Milk.

I next shall consider animal Food.

Here we have Difficulty of setting Limits I believe as at Regard to Vegetables they are all capable of affording

Of the various animal Aliments

Nutriment & we only reject them properly as containing Poisons as the Case is of some Insecta, Vermes, Pisces & Amphibia. The Variety of Animals extend to 6 Classes. The Carnivorous Animals are now generally excluded tho they have been used at Times. We find that there is a Degeneracon takes Place in our Bodies from the lowest Vegetable Aliment to pure animal Matter. We can contain Vegetables on our System longer than animal Food & especially carnivorous Animals & especially the mammalia & Aves of them. & first we should chuse those who naturally live on vegetable Food alone. Then those who can live on either animal or vegetable & such of them as we hence confined to vegetable Food alone. last the Carnivorous. Those that live entirely on Vegetables are least alkalescent & in the Degree according to the Nature of Vegetables. 1st Those who live on succulent Vegetables. & those that live on Grain tho it renders many of them more grateful to the Taste & perhaps more nutritious. 3. The Exercise they employ renders them more alkalescent & is the foundation of the Cars ferina as the Deer differs from the Sheep. The Animals may differ in this Respect tho the Circumstances are all the same as the Goat & Sheep. There is besides this a Difference in their being more or less perspirable. Fish are less perspirable than

than other animal Food as Birds. Young Animals less than old & they have been thought more nutritious, they are of slower Digestion in the Stomach however do may often be seen poor weak Stomachs. I think this may be explained from our Aliment undergoing a change to a saline State & more or less difficult solution fit to put it to pass off by the regestion I imagine may make the Difference. I must now speak of their use to supply Deficiencies. Here I might enter on the whole Extent of Dietetics, but it is too large & I shall only speak of them as Remedies for particular Deficiencies.

The general Effects of the Nutrientia are to fill the ves: :sels by supplying the Quantity of Fluids, & the chief Effect of this must be to increase the Tension of the System, as you know greatly encreases Strength & it must by dis: :tending the Blood-vessels & Heart produce a considerable Stimulus to the whole System & also they produce these Effects by operating directly on the Stomach, & affects the Tension of the whole so much by sympa: :lating it more or less they also stimulate the whole System. This is the general Operation of the Aliments but it is difficult to explain when we consider it more particularly.

The Action of the Stomach seems to cause a Fever in

the System in every particular first producing a cold
or chilliness in some Degree & then a hot fit. This I think
is caused by the Action of the Stomach wh causes a greater
flow into the Stomach & in some Measure into the whole
this may be in a great Measure from its Distension but
I think it must also act from its Stimulus as an acrid. as
we find the Fever vary from the Nature of the Food.
It is greatest after eating animal Food. Both animal &
vegetable Food contain saline Matter & this is evolved
in Digestion but this saline Matter appears considera-
bly different in its Power of stimulating the System.
The vegetable food contains acid substances very dilute &
possessed also of some Degree of a sedative Power.
Animal Substances contain a more stimulating saline
Matter & that evolved too in a great Measure.
I would carry this further & say that the Difference
in the stimulating Qualities distinguishes the several ani-
mal Foods from one another, the old from the young.
The old have it most evolved & in the same proportion
should stimulate most in the Stomach: this agrees
also with the Time required in Digestion & I think this
saline Matter must have a considerable Influence in
modifying Digestion & we find that animal Matter
advancing to a putrefactive State, excites it more quickly

Cases where Nutrientia are required

than any other. In weak Stomachs of chlorotic or hysteric Women we often find roast Beef easily digested while a Chicken will remain for twenty four Hours in the Stomach. Along with this I think it is probable that the Stomach is endowed wt Contractability according to the State & Progress of Digestion & that the different Degrees of Ferment gives a peculiar Stimulus & different State as to most People we find that give a greater Sense of Distension & Weight & more thirst than Beef. - This is too extensive & difficult to be applied to all different Aliments. The Nutrientia are to be employed in Remedies where there is a Deficiency of Fluids which may happen from —

1st Evacuation from Lesion. 2 Diseases consisting in encreased Evacuation. 3 Interrupted Supply when the usual Evacuations continue. 4th Impeded Assimilation commonly attended wt encreased Evacuation. —

There are some Cases not to be removed by the Nutrientia alone, as where the assimilating Powers are much weakened, the various Cases of wch I cannot point out. It is to be known by want of Appetite for Hunger always appears to be a Consequence of finished Digestion. This is our Guide especially if attended by Aversion Disgust or Nausea. In these Cases giving Aliment is generally lost Labour. It may justly be made a Question whether

r not we should ever force Aliment to be taken when
there is no Appetite or even Aversion. I can easily
conceive a Case often mentioned by our good Women where
the Stomach is distended with Flatus & where forcing
down a little Food as they direct may either expell the
Air or cause its change & Reabsorption & there may also
be other transitory Affections that a little Aliment ta:
:ken down may remove & appetite be produced: what they
are I cannot venture to say. A more considerable Case
where Aliment is forced is where there has been considera:
:ble Inanition & the Cause of it still subsists, here owing a:
:bove will be instantaneous whether the Cause produces
improper Assimilation or not.
All these occasioning Inanition & weakening the
chylopoetic Viscera have a considerable effect in
both Ways, but the Cases of Inanition subsisting with
the Cause attended with encreased Impetus, such are
the Cases of Fever, Inflammation & Haemorrhage, & also
it may happen in the Case of encreased Impetus depend:
:ing on Laxity. In this Case especially where Inanition
depends on encreased Impetus, it is that the Choice of
Aliment is necessary. We cannot long delay the throw:
:ing in of Aliment & must use that which stimulates lead
:ing the vegetable & avoiding animal Food

Here we necessarily suspect a Cacochymia wh might ly
be conceived in several Cases wh I believe rarely ever t
occurs & only requires a Choice of Aliment wh I
imagine is here the principal or only remedy & that
it is this & not abstinence from food that is required. ly
With Regard to the Administration of Aliment
there are but a very few general Rules necessary.
It must be accomodated to the State of the assimilat g.
Powers with respect to our Streng th & as they are mo.
more or less impregnated with assimilating Fer:
:ments & there is no Case of Weakness where the
assimilatory Powers are not in some Degree wea:
:kend & we should first give a small Quantity of
Aliment & then encrease it & this Rule is more firm:
:ly established if we attend to the whole System.
The State of the Vessels is soon in some Measure ac:
:commodated to the Quantity of Fluids & when there is
any Deficiency you cannot restore the proper Quanti:
:ty all at once. All the other general Rules respect
the Choice of The Aliment & are either to be drawn
from what I have said above or from a full Detail
of The Materia Medica.
B This is not accurate with regard to System. I have

Of Roborants for Laxity

not given a compleat set of Indications & this is the only
Chirurgical one. It is of little Consequence & I could not
treat it without entering on the Doctrine of others
C. This is a very complex Indication & I consider it to its
Application to the simple Solid, but it is most generally
applicable to the Solidum vivum. The Remedies for
this are very various & we cannot speak of them till
we have considered the Cases to wh they are applicable.
1st The State of the simple Fibre may depend on the organ-
nal Fibre giving Laxity.
2d It may arise from the different Proportion of solid &
fluid: (this might perhaps comprehend the other) &
arises from various Causes as applied in a Nutrimen.
or from weakness of the cachal and Powers or from viscous
Humours applied without from Inundation & lastly
the proper Degree of Solidity being given it may depend
on Tension or Pressure. As the same occurs in the
moving Fibre it may be referr'd to two Heads
1st Atonia. 2d Palsy -
1st Atonia arises from a Cause acting on y moving fibre itself
2d Palsy arises from the moving Fibre being weaken'd
from Causes intercepting the nervous Influence from
the Sensorium.
From these Cases the various Roborants are indicated

and here I invert the Order of the Causes & say that in Palsy the Robrants must be stimulants.

In the Case of Atonia we see that it may depend on a Laxity of the simple Fibre & it depends more particularly on want of Tension & perhaps on some other Causes we cant explain, as the Operation of Sedatives & this is to be cured by all Means of restoring Tension partly by Exercise, partly by Cold & too great Heat is one of the most frequent Causes. Lastly as depending on want of Tension it may require the same Remedies as the Case of Palsy. Exercise is one of the most powerful Means & all Medicines that condense the Solids as the Class of Astringents.

1st The Use of Stimulants. 2d The various Means of giving Tension. 3d Exercise. 4th Cold. 5th Astringents. The three last are what I am to speak of here.

1st Exercise is also to be consider'd as a remote Cause of Disease & therefore I shall speak more generally of it here.

1st It is plain that the Function of our Solids depending on Flexibility or Elasticity depends on the mobility of the Particles on one another & this is in a great Measure regulated by Exercise & of Consequence it

strengthens the System.

Our Solids are formed of Fluids & therefore the Nutri:
ment must be in a fluid form, but there are excha:
ciand Powers that encrease the Density & Strength.
The Growth of the Body is always accompanied by
stretching Powers & as it acts on elastic Bodies, it
gradually gives more Firmness & Cohesion & of Conse:
quence Strength. Exercise is the chief condensing Po:
wer, along with Exhalation which it encreases by pres:
sure from Motion or the Distension of the Vessels has
also considerable Effects. It is also probable that
the superfluous fluid is exhaled by the Power of
Heat & thus is greatly encreased by Exercise, so that
all these tend to shew how Exercise strengthens the
simple Solid Parts: as they use Exercise. This affects
particular Organs, but the general System ought to be
rendered dense by the closeness of the cellular Texture.
This is especially brought on by Exercise as is the
Cause of the Rigidity & sometimes Ossification of the
Arteries in old Age. While Exercise has these Effects on
the simple Solid it also has considerable Powers
upon the moving Fibres as a Stimulus. I formerly

said that Repetition of Motion facilitates the In:
:flux of the nervous Power to that Part & by Custom
also the Effort becomes greater & it must in time
streng then the Tonic Power over the whole System, & the
ready Influx of nervous Power. Exercise also expedes
the Circulation & executes it over the whole aortic & pul:
monic Systems, & this especially affects the extreme
Vessels & merely by the force of Impulse This 571 This is en:
:creased independant of the Quantity of Fluids & this
must promote all the Excretions & Secretions, by wh
Exercise not only streng thens the Solids but supports
& induces the proper State of the Fluids, hence is the
chief Means of preserving Health & principal Re:
:medy in the Cure of Diseases. It is forbid in an en:
:creased Impetus of the Blood, unless to a particular
Part & that internal wh may be remedied by Exercise
determining to the Surface, but independant of
this it may be carried to Excess, produce too great
Impetus of the Circulation, Haemorrhage & various
errores Loci. But when carried to excess also it may
overstretch the Muscular Fibres as that when employ'd
to strengthen the System it must be within these

Bounds. In obstruction of the Fluids it may be a considerable Remedy, but the Objections to its Use are more remarkable are more remarkable against the desobstruent Effects of it. It may produce spas: :modic Effects, which may make them more obsti: :nate & we know that whatever encreases the ner: :vous Influx is always followed by langued & therefore it must be limited on this Acct. Hence its Limitation & the Difference of the several Ex: :ercises we employ. The voluntary Motions, bo: :dily Exercise) principally produce langued & bring on increased Impetus by expeding the Motion of the venous Blood. There are other Kinds of Exercise nearly independant of the Action of the Muscles got by the various Kinds of Gestation: as Sailing, going in a Machine & Riding. The chief Effect is here by the external Pressure & this affects the Circulation principally, for tho the Body appears seemingly at Rest, when the Motion is equable, yet when it stops, we find the Determi: :nation it has to go forward. This greatly affects our Fluids & on the least Variation of the Motion

the fluids may be found to be impelled. This occurs more or less in all Gestation & from this I imagine they act so much as desobstruents & overcome Obstruct:ions as much by determining to the extreme Vessels along wth these for the most Part some Degree of muscular Motion concurs. The Effort is gentle but constant & can be born longer than bodily Exercise.

2^d Cold. As acting on the inanimate Matter, con:denses it, but this only on the Surface & not conside:rably; next it condenses the fluids & allows the Solids to contract by this Means & to This I would add its Condensation of the nervous Power w^h must give the whole solid Parts more density. next its Effects are still more considerable to our System as sentient to which it acts as a constant Stimulus & from This it produces its full Effects in the Contraction of mus:cular Fibres. The other Effects of Cold are secondary, its Effects on the Surface are propagated along contiguous Mem:branes & The Tension of the whole is increased & also its Stimulus is continued over a great Part of the System particularly along the whole sanguiferous System, whose Action we find it often excites & from This & from its increasing the Tone it promotes Perspiration & all the excretions & also gives Activity. There seems to be

a nervous Communication propagated whether by Tension or Stimulus by which the Application of it to a particular Part, to a finger, may spread its Effects over the whole System & produce a general Stimulation. This seems to be connected merely with a Sense of Cold as often the Body is of the usual Heat when tried by the Thermometer. Cold is a Stimulus to excite the Energy of the Sensorium & thereby the whole System. The Motions of the System I have said are more directed by final Causes than we can explain & Cold by this occasions a Reaction of the Sensorium: which obviates its Effects & this not only gives an momentary Tension but invigorates the System. There is however something more in the Effects of Cold than I can explain. The Tonic Power depends on the Density of the solid Matter of our Nerves & especially of the Ether. If the Elasticity is encreased with greater Rarity, it does not answer the Purpose but gives Debility & there must be a certain Balance of Elasticity & Density from Cold & it is therefore the most proper Stimulus to our System & this should be much above at times that State of Ard we find agreable & greater than the Cold of our Bodies always. Heat destroys Vigour & lessens the generating Power as is seen in warm Climates. The Use of the Application of Cold is easily understood from the foregoing Principles of its acting

as a Sedative & thence destroying Life if in too great Degree of its Producing Constriction hurtful if not followed by Heat, so it is always unsafe if it does not stimulate, if it is much greater than the Degree of our System, it must be Hazardous to excite. All this applies easily to cold Bathing not so to cold Air. In Hæmorhage we know how necessary it is to keep the Body cool, as Heat induces a Delicacy but the Degree of Cold is not ascertained tho they are now trying it in the small Pox.

3. Astringents are a Set of Medicines whose Uses are ill ascertained but I shall mention some Facts with regard to them & some Conjectures otherwise.

I suspect that Astringents are such Matters as coagulate a Part of our Fluids & act on the Solids as of the same Nature. They may be reduced to three general Heads. viz

1st Alcohol 2 Acids 3 Styptics!

The coagulating Power of Alcohol is well known & also its hardening the Solids. It is applied externally to harden the Surface & strengthen Cicatrices. I know of no other Use to the simple Solids. It acts also to the moving Fibre as a Stimulus & sedative.

2d Acids coagulate Fluids & harden Solids & have both a Stimulant & astringent Quality. When they act as astringents there is probably a Diminution of Activity,

of the nervous Power, & then they act as Sedatives, but in a certain State they dissolve animal Substances & stems: late more than constringe & must be more dilute to shew Astringency. Both alkohol & acids have been reckoned powerful Astringents from their stopping Hæmorrhages but this is found rather to be from their coagulating the Fluids & forming Thrombe on the pe. tulent Mouths of the Vessels rather than constricting the Solids.

3 Styptics are of various Natures more than we can speak of. Acids combined with a certain Earth that dont neutralize it entirely forms a Styptic. Of this Kind is Alumb & has led to a false Notion that all Earths combined w. Acids form Styptics, but I know of none else of that Class & on the Contrary they dissolve the Blood & if ever they have appeared astringent it is from their refrigerant Powers if they are exactly saturated.

Most metallic Salts have similar Effects to Alum they unite w. Acid & give it a Degree of Concentration & thus partially saturated the acid coagulate animal Fluids & may seem astringent & it is here that some of them form powerful Stimuli. The Astringency alone appears in Acids joined with Lead & Iron.

Stimulus alone appears from Silver, Antimony & Mercury & a Shock Operation from Gold, Copper & Zinc

The Effects of Tin & Arsenic are not sufficiently under-
stood tho the astringency indeed appears in Tin in some
Measure, but is combin'd with the strong Stimulus of
Arsenic. Acids appear to enter the Composition of styp-
tics. as styptics have been held the vegetable Acents.
their Acidity covered but by what Means is uncertain.
but we know That As is acid concentrated & fixed in solid
Matter. Austere Vegetables are sensibly styptic tho
without perceptible Acidity but when we consider how
easily the acesb pass into The austere we are led to think
that here an Acid is combined with some Earth & it may
be enquired whether or not Acid is not always the cause
of Styptitity. The vegetable astringents are known
by their absorbing acid from Metals. They bring Iron
to a Black Calx & are hence the Foundation of Ink.
Thus far Acids operate on our simple Solids but not
perhaps very considerably for there are Doubts if
something else does not concur with the Operation of
styptics, in giving Density as in Tanning of Leather
great Pains is taken to retain the cellular Texture but
away the Gel. If we could not determine their Effects
in any other way but the simple Solids we should find
them of little Use but They operate also on the sensient

Parts. A small Quantity of Alum or Saccharum Sa:
turni applied to the Tongue will produce sensible
Constriction over all the Fauces, Whereas Decoctions
impregnated with them or astringent Vapours do little
I imagine in Part from their fluid Form, in Part from
the Surface being lined with Cuticle & only act con:
siderably on the tender Parts as the Eyes, Mouth &c.
The Theory of their Operation internally is uncer:
tain as we cannot suppose that the small Quantity
carried to the Vessels can have much Effect in Diarrh:
chages & any Effect they have must be from their topi:
cal Constriction propagated to other Parts. The Sto:
mach is the most proper Organ for this as so much
connected with the System & here the vegetable
Astringents have small Effects compared with
the Fossil. On this footing the metallics have been
called Narcotic. they are not Hypnotics like most
Sedatives but have an Operation sui Generis which
remains to be explained.

Astringents are strengthners as changing the Ten:
sion but in a higher Degree sedatives & pernicious.
Astringents often give Construction that prevents re:
curvence of Atonia that would occasion Spasm &

Convulsion. The Operation of Bark thought generally specific certainly produces Effects in this Way but there are other Powers joined I think evident. It is surely as rein: gent & other substances shew the same Effects, but this is not all, for those Medicines which have the Power of Bitters as well as astringents have not its Effects & yet the Ague was cured before it was known.

One Difficulty remains with regard to Bitters, they certainly strengthen but do they act as astringents or not. If they act as Astringents it greatly embarasses our Theory & we have Difficulty of supposing that they act as stimulants.

They affect the nervous System produce a strong Contraction where they are applied & invigorate the Circulation hence they act as Aperients & deobstru: ents as well as astringents. This appears to be ac: cording to their Degree, but there is considerable Difficulty both in Theory & Practice If Sacc: Sat: is given to stop Haemorrhage internally the only way we can suppose it to act is by propagating a Construction from ye Stomach to that Place but we should think that it would affect the whole Vessels equally & produce great Change in the Determination & this can not be obviated by any sedative

Power but probably it may effect chiefly the Part wh
has a great Degree of Excitement. If Hæmorrhages are
merely passive depending on Relaxation we see how
they may be of Use but Evacuations are most common
:ly from encreased Impetus & then we see they may be
hurtfull but may they be applied externally. If
the Evacuation is violent we must hazard something
but it certainly endangers encreasing the Disease over
the System & was in the Part & it is always dangerous
to interrupt the natural Determination, but they
have sometimes been found of Service & I think this
may be explained. There is I think no Case of encreas
:ed Impetus that does not act by Exacerbations & Remis:
:sions as a Bleeding from the Nose is often a Symptom
in the Hot Fit of an Ague & a regular Hæmoptoe
is sometimes cured by the Bark on the same footing
as an Intermittent is so in excessive Menstruations
even uterine Hæmorrhagy & Fluor albus. Exacer:
:bation & Remission appear & I think they may be
of Service & only have failed from our employing
too small Doses.

Of Emollients

Emollients may seem the converse of the other ap:
:pear to apply to the simple Solid & moving Fibre, but
the relaxing the Tonic Power of moving Fibres to the
sedantia & antispasmodica & here only consider the
Means of relaxing rigid simple Solid. The Means
are always either 1 Water. 2d Mucilage & 3d Oil.
I know not if there may not be a Head of Means
of dissolving animal Solid, but it is too subtile Water
is by far the most powerful & as we understand the
Operation of one we understand the other too, which are
less powerful but more durable. Water enters into
the Composition of animal Solid & according as it
enters they are more or less rigid as appears from
many Experiments especially Dr Bryan Robinsons.
Few fluids relax more than cold Water by him it is
as 35 & the other as 98. & Warm Water relaxes as
98 & not so much unless &c. Vide. which destroys the Sub:
:stance, hence Water is the greatest if not the sole
Emollient & all act as impregnated with it.
I here consider its Effects as applied to the Whole
Surface in warm Bathing. It consists of two relaxing
Powers in its Operation, Moisture & Heat. The last

not solely as assisting every Menstruum. It is
just suited as dissolving animal Matter, to clean
the Surface from Mucus & sebaceous Dirt as very apt
to concrete with Dust & obstruct the Perspiration & also
are apt to excite many cutaneous Eruptions. Hence
they obviate & cure many Diseases.

Water assisted by Heat not only dissolves & washes off such
Matter but insinuates itself into the Cuticle & relaxes it.
& tho it went no further from affecting the subjacent
Parts, it might affect the whole System from the Connec-
:tion I have mentioned. In this way the Effects of
its Relaxation may be very great but they are more
as from a Number of Nerves being expanded below it.
& not only act on them as Organs of Sense but as com-
:municating with the rest of the System & may be con-
:sidered as rarefying the Ether & relaxing the whole
System. Probably another Consideration is to be
included as far as this Relaxation of the Ether is pro-
:per & natural it gives a pleasing Sensation & may have
considerable Effects by withdrawing the nervous power
from the Sensorium which may be restrained from
Anxiety Delirium &c & then the warm bathing may

induced the unexcited State necessary to produce sleep.
Its Effects however are not confined to the simple Solid &
nervous System. but affects also the sanguiferous
System. It is applied to the Extremities of the Vessels,
unlaces them & allows a considerable Change of Determi:
:nation & the Relaxation is propagated: a Considerable
Way. It is disputed how far it penetrates. I think from
the Relaxation of the Cuticle it may affect all the sub:
:jacent Parts even the Ligaments & Bones. It
may also be applied to the Abdomen affect the In:
:testines & Viscera & remove spasmodic Affections
from them.

The Application of Heat I have also said rarefies the
Fluids considerably more than it relaxes the Solids &
hence it may encrease the Tension & Impetus & the
Heat of warm Bathing is found hurtful in the Cases of
increased Impetus. I must say that the stimulating
Powers are very considerable but are useful as accom:
:panied by a relaxing Power but they also may take
Place sooner than the relaxant, but if so tempered as to
come on nearly at the same Time & are moderate they
can have no bad Effect & besides this the stimulating

Powers are more transitory than the relaxant. These
Principles would be illustrated by an Application to
particular Diseases but we have not Time for that
wh have given also the Principles for its mode of Ap:
:plication. I think a little below the human Heat is
the proper Degree to obtain the relaxing Powers have
no bad Effects from its Stimulus but we have no Experi:
ments to determine its Effects higher & applied for long
Time, 2 Hours as in France speaks of. I am unce:
tain how far it may produce relaxing Powers when much
continued as we find in warm Climates it is very con:
stantly used & was especially so by the Antients with:
out any bad Effects & its Use in promoting the Perspi
ration is very obvious.

I now propose to consider the Indication of exciting
the Motions of the System wh is done by very various
Means which might almost include all Remedies.
Formerly defined Stimuli to be either direct or what
immediately affected the moving Fibre or indirect wh produc
es a Sensation & by that Means a Reaction of the Sensorium, Re

Both these may be found to take Place in the sanguiferous System, but I always have declined entering on the indirect tho I find it as a frequent Cause of Fever but I know not how to excite Fever at the proper Time and due Degree or when to do it if I could & I shall only consider the direct in this I have before pointed out the several Powers that may be thus employed.

1st Every Impression producing Sensation. These are numerous & of great Use with regard to the Conduct of Health & there is an Indication afterwards to be of the when they are to be removed, but they are seldom given as Remedies. Most Impressions not accompanied with a reflex Sensation are seldom given & rarely taken away in Disease. The others are rarely employed nor are aware of their Operation as they act so various by on diffe: rent People & are very various as the Degree of Motion they excite from the former Habit. They are frequently Remedies by Accident but are also Potentie nocentes. Anger sometimes cures a Palsy, but also often proves fatal. A Physician by Experience of a Patient may perhaps apply them, but for this no Rules can be given,

I also pass over Motions in the System that prove indi:
rect Stimuli as included under Exercise or some of them
that come under Sedatives. I then come to the Use of Ali:
:ment whether as stimulating the Stomach or the Sys:
:tem in general & than I have spoke of already.

2 Tonics
3 Exercise as Tonic & stimulant
4 Cold as a Tonic & Stimulant.
5 Heat as a Stimulant.

There remains Electricity, Mechanical Stimuli
& the chymical Acids of which I am to speak.

1st Electricity this is a very subtile uncertain Enquiry
& I shall leave it on the footing of Experience. It seems
to act most purely on the nervous Power while the others
act principally on the sanguiferous. This Power of ex:
:iting Motion on the nervous Power makes it proper in
a Torpor of it but at the same Time it may prove destruc:
:tive of life & we know not the proper Limits & I think
I have seen both. Therefore it is always to be employed with
Caution in the lower Degrees & we are to expect most of
its Effects from a Continuance & at the same Time its
Effects are not so entirely pure but it may affect the

sanguiferous System & the Danger I think often arises
from exciting it where there is Congestion in the Brain.
2d Under Mechanical Stimuli I include Exercise & all
Cases of Impulse. The last is most commonly to be
spoke of as affecting reflex Sensation & the only Case I
have to speak of is what is called Friction. Thus we can
understand in no Way but from the alternate Motion prov-
ing a Stimulus to the sanguiferous System & encreasing
the Determination to the Surface & encreasing Perspira-
tion &c. I shall not say where this may be of Service but as
particularly so joined with warm Bathing as practised
in Asia. I seldom see its good Effects here as we apply it
improperly dry where it must be very gentle or very long
continued.
3 Chymical Acids or strictly stimulants. Here so great
Variety of Matter is employed & we can scarce see the
Connection of them & I here entirely trust to Experience
as I do not see any Propriety in any of them more than
others a priori as Remedies. Physicians have been
satisfied by finding the Action of mechanical Acrid
but I could easily shew that this cannot apply to saline
Matters from a Notion of these Figures taken entirely from
their Figure & nothing can be more evident than that
Solution does not depend on Figure & from Observation

of the sensitive Plants, it is evident that there is an
Action of certain æthereal Matter very different from
any thing spoken of in the Corpuscularian Philosophy
& I have hinted at something similar to ordinary Solu-
tion of a Union of various Æthers & hinted at these in the
Case of Smell & Taste & also that there may be some cases
as we see elsewhere of one Æther repelling another.
Tho we can

1st Every saline Matter soluble in Water evidently is an
Acrid with respect to us especially the acid & Alkali
the simple Bodies & they corrode the Parts & may be
supposed to destroy the Æther united with these solid
Parts but the neutrals dont corrode & they must have
some different Operation. Some of them seem to act
as Sedatives or Refrigerants, & some of them more re-
markably so than others. Common Salt appears
the most pure Stimulus while others of them seem
to require a Modification of the Nerves acting on the
Stomach

2d A great Number of Oils are stimulants all those
that are acrid to the Taste or odorous hence most of

the essential Oils & to these may be joined the Chy:
:mical Productions of the empyreumatic & Ethereal
Oils & here the same Doubts lie that lie many Chy:
:mists say Oil is naturally Bland & the acrimony
may be supposed depending on a saline Matter tho'
it has not been discovered.

3d Resinous Matters, & they lead us to think that the
Acrimony may always be saline as they in the form
of Balsam appear composed of Oil & a saline Matter
in the Class of the Tetradynamia the same appears
as they seem to contain a volatile Alkali
& various animal & mineral & some vegetable Sub:
:stances peculiar. They all seem to contain saline
Substances especially the two first tho they are not
clearly proved; & as many of these are entirely poisonous
it would give us a Difficulty of resolving Sedatives to a
saline Nature

A Doubt remains with regard to Bitters very peculiar.
They all contain an Oil but whether their Operation depends
on this or there saline Matter I am uncertain & especially
as they act both as Stimulants & Sedatives.

The Operation of Stimuli is very extensive both on the Part & the Sensorium & on the whole, sanguiferous System. They operate especially on the Part they are applied to & by that on the sanguiferous System & I think it is probable that they act on the Sensorium by the Pain they produce as in the Stomach but some of their Sedative & antispasmodic Effects shew their immediate Action on the Sensorium. As their Effects are so much we are much limited in their Use as we are not certain as to the Degree of their Stimulus & their sedative powers. The Volatile Stimuli are mostly topical in their Effects & are momentary, if ever they are general they must in large Quantity & hence frequently repeated. The general Effect of most Stimuli depends on the Topical but acts on the nervous System but most on the sanguiferous. They differ as their Effects are transitory or permanent. The more they act topically, they are more permanent & less when general, & hence the general may be most frequently repeated, The Topical Effects of Stimulants are Evacuations, as they operate on Excretories & I think if they are applied to excretories

they may all have this Effect, in place of the Notion of specific Stimuli adapted to particular Organs only & I think all Appearances of specific Stimuli may be explained in another Way: The Chief Use of Stimulants are as Evacuants & we are at a loss for a general Stimulus in Palsy that does not distress us by its topical Effects. In the Case of Fever where the sanguiferous System is greatly excited before it is removed we should think of the Use of Stimuli, but this has long been tried & commonly of pernicious Effects. If ever they are here admissible we are confined to the more general & transitory Stimuli accompanied at the same Time by an antispasmodic Power.

Sedantia or means of diminishing the force of Motion in the System. There are many more Occasions for this Head than that of Stimulants tenfold one. The Powers here are very great but I think they may easily be reduced to three Heads.

1st The withdrawing the ordinary Stimuli from the System. Dea

A Notion has prevailed that our Bodies act as an Automaton; I believe it is True in some Respect, but as our immaterial Part is connected with a materi:rial Mechanism it would fall into total Rest were not Stimuli applied. We know that it would never have appeared in the form of a living System had it not been for the Power of Heat & could we with:draw all Impressions & of Consequence stop all Sensation it would soon become a Nonentity as happ:pened to the Dutch Physician who took a Fancy that Sleep was the most favourable State for his System.

2d Various Means of weakening the moving Power of the System whether They require any Impressions or not.

3d Various Means diminishing the mobility of the nervous Power.

The 1st is very various & considerable as by 1st The Aliment being withdrawn so considerable a Stimulus from their Bulk & Quantity daily required. 2 with:drawing all external Impression which are to be

considered as Stimuli & some of them are almost necessary to the System as Light & Noise. These act as Impressions but especially for their producing intellectual Operations & the avoiding all intellectual Operation is a 3d Head. All these causing Anxiety, & such as are personally interesting th avoiding Excess of Watching which naturally alternates with Sleep. This cannot be without the Impressions I have mentioned. 5 avoiding all reflex Sensations which require the Existence of intellectual Operations some of these are direct Stimuli by others sedative as Fear, Grief &c but act as indirect Stimuli. Here I would add 6 The Gratifying of solicitous Appetites of difficult Application applied to particulars as if the Gratification of Lust took off the Necessity of the System, it shd be placed here but in different Ages it may arise from other Causes & is difficultly made an article of Practice & the same of the Gratification of Hunger &c if it is thrown in here it must be that the least Stimulant The Gratification of Thirst we can more easily allledge to be a Means of diminishing the Motion of ye System as we can more easily promise on Them not being

Stimulant, & they seldom are desired so by the sick here.
Another Means is avoiding muscular Motion wh affect
sensation & also stimulates the sanguiferous Systemas
Respiration & hence speaking. & we are next to indulge
Sleep & this we do by a means that might have been spoke
of under the Head of intellectual Operations by giving
Impressions of no great force or particular Tendency as
the aolian Harp wh can lead to no train of Thought &
lastly avoiding Heat so considerable a Stimulus if
above 62° for then immediately it is felt as a Stimulus
& cool Air is then a Means but how low this may come
we know not only to ballance the generating Power.
This gives the antiphlogistic Regimen so much talked of.
2d The Means of restoring Tension which I have said
is so considerable as increasing the forces of Motion.
This is done by Evacuations not induced by any Stimu-
lus & one we are sure of is the case of Blood-letting
wh I think acts chiefly as a Relaxer To be considered in
another Place. Warm Bathing comes in under this
Head in the Degree so as to relax the Skin & prove an
agreable Sensation & some other Impressions contain

and leading to no Train of Thought. And thos to all too perhaps to warm Bathing is warm Drink internally but They act but little in that Way they remove Thirst, uneasy Appetite & Stimuli from Acids thrown in or generated there or in the alimentary Canal altogether. They may when taken up give Increase of Tension but they relax by from Flexibility increase the Secretions which obviates this & makes them an Article of the antiphlogistic Regimen not spoke of before.

3d Those that act on the mobility of the nervous Power, they are very numerous but I refer them to 3 Refrigerant, Astringent & Soporific. These are the Medicines more strictly called Sedatives. It is very difficult to find a common Nature in them either Similarity in Substance nor Effects.

1st The only Substances to be spoke of as Refrige-rants are Acids & Neutral Salts at least of certain Kinds as I think some of them are rather universally stimulant. The others & Acids are found of use in encreased Impetus in Fever. Inflammation & Hema-rhage & perhaps some others. This we have as a fact

and I imagine it is by a Sedative or Refrigerant Power as no other Operation seems to account for these Effects. In Acids the Effect might be ascribed to an astringent Power but not in Neutrals upon the Similarity of their Effects they are probably of nearly the same Nature. This Effect has been ascribed to an antizymic Power or a Resistance of Fermentation & particularly as Antiseptics. As such they might be supposed to operate in the Stomach but from the Quantity they can be thrown in & the Bulk of Matter they are added to I think they can have but small Effect in them: mach & afterwards in their great Diffusion they must have very small Effect & if they are sedative we must seek for another Cause. They are also spoken of as attenuants but the Quantity is too small of Neutrals at any Rate of Acids this Effect could not occur. Of all the Acets offered. Their diuretic Quality is the best tho we have besides some Proofs of any dually sedative Power as we have the Effects facilitated by taking down cold Water into the Stomach. They both produce a cold in the Stomach & then a Sweat & we may suppose that cold produces a Reaction of the System & perhaps renders

do The same tho I Dont say that it is by their producing
actual Cold as they do it when dissolved -
2d Another Proof of their sedative Power is that when
used as Purgatives they produce Flatulency & Atonia
not in Proportion to their Evacuation.
3d Tho they stimulate we never find it of any Effect
not propagated any Distance which makes it be
supposed to be counteracted by a sedative Power.
Mr Alexander finds that a Dose of Nitre diminishes
the Frequency of the Pulse, but it immediately returns.
The first points out its refrigerant Power but its
transitory Stay does not explain its Effects in Fever,
the same of cold Water.
Astringents. It is evident that if the Effect of it
is to constringe the Part, it must compress & condense
the other, it must take off Mobility & prevend the
Effects of Atonia & from this we can explain the Ope:
:ration of the Bark but it goes further. I used to
explain the Power of Lead inducing Palsy from this.
but I now do not as it does it not only in the form
of Sach. Sat. but in the form of Vapour & even Mercury

does this. I think the sedative Power of several Metals appears singular & can scarcely be referrd to astringency. Soporifics are the most considerable Head of Sedatives & I cannot say to how many Heads they should be divided but I confine Myself to Opium. It is known to diminish Sensibility & Irritability in the Part & in the whole System & induces Sleep. Hence we say it diminishes the mobility or excited State of the nervous Power how I shall not attempt to explain only say that it acts immediately on the nervous Power & not on the Blood.

This I conclude first from the smallness of the Quantity which cannot be supposed a Ferment.

2d From the short Time required for its Operation

3 It operates on Parts entirely removed from all Connection with the sanguiferous System as on the Heart of a Frog cut out of the Body.

It is particularly suited to allay Pain from its diminishing Sensibility & Irritability being diminished by it makes it fit for allaying Motions & increased Secretions.

It is however a Stimulus also & from this I would account

for its producing Delirium & the spasmodic irregular
Motions in large Doses. To account for this two different
Parts in its Composition have been supposed but this
is contrary to all facts in Chymistry & I think its
more easily explained from a Reaction being pro-
duced in the System. Its stimulating Effects are
remarkable & it leaves the System in a State of Debi-
lity tho its Operations are in some Degree transitory
but there is a State of Atonia comes on & disposes
it to be affected by Stimuli & to spasmodic Contractions
It is a Remedy in so many Diseases but as many of its
Effects are opposite it is uncertain & either of them
may be carried too far & as the Effects are followed by bad
ones they are all embarrassed & Difficulties in its
Operation. I shall endeavour to obviate these & consider
it as a Sedative
1st It is as a Sedative indicated in increased Sensation
& increased Action but we must consider the abuse of the
increased Excitement & this is always to be referred to
Stimulus & is oftner to be cured by removing the Stimulus

than diminishing the Effects of them. Opium must therefore be according to the State of the Stimulus pre: sent & to its mad Effects. Opium is forbid in the case of a permanent Stimulus in the Body especially where the sanguiferous System is excited & there is a Determination to the Brain. Then it is not only likely to be ineffectual, but is apt to increase the Power of the Stimulus. This of Opium's not being admissible in Fever is one of the most general Rules in its Exhibition in cases of Inflammatory Diathesis, & particularly where there is topical Inflammation & it is also improper in the excited State of the sanguiferous System frequent in Hamorrhagy, but in this always to be observed. It may sometimes quiet Pain in Inflammation & the Effects of the Motion in Hamorhage but in fact we dont find it useful or allowable. Its Effects are always more or less transitory & after its Operation is over the Irritation of Inflamonation & Hamorrhage remain & are apt to return with more Violence as I think is to be ascribed to its

giving a greater Irritability to the System & allow
the former Stimuli to act more powerfully. In this
Pathologists to suppose always that its sedative Power
relaxes the Blood Vessels & allows the Expansion
of the Blood &c may perhaps occur & will add to
the former Effects. There are however Cases of
Topical Inflammation in wch Opium is of Service
but this is the Cases of truely topical Inflammation
unattended by general Fever. We are sure of some
such Cases in Rheumatism where there is general
Fever I only find it gives a momentary Relief & aggr:
:gravates the Disease. But where there is no Fever &
the Pain is purely topical & permanent in the Part
there I think Opium is of the greatest Service as is
also the Case in the Toothach without Fever. I think
also it is of Service in many Hæmorrhages particu:
:larly of the uterine Kind wch are often from the State
of the Part without any general Fever
I will go further & say that Opium is admissible where
there is a topical Stimulus as Calculus in the Ureter

& Beliary Ducts. They excite often general Fever &
always Inflammation. Blood letting is often re:
quired but I always find Opium safe & useful as
taking off the Spasm of the Duct & allowing the
Passage of the Stone. This is an Exception to a good
general Rule given by Dr Young.
It is again a very general Rule that Opium may
be employed where the sanguiferous System is not
excited but this is too general & I shall consider
it under 2 Heads.
In Pain or increased Sensation Opium gives Re:
lief, but it is only temporary unless the Cause be
removed but the Pain may exist after the Cause
is gone or may be cured by Opium as in the Case of
Spasm. Again in the Case when there is an Effort by
Nature it may be of Service as in Calculus the Duct
will operate in expelling it during the Digestion of Pain.
It is also proper where there is no Danger of an encreased
Impetus of the Fluids or a Rarefaction & this restrains its
Use in the Case of Hæmorhagy. If the Pain is violent

& from a permanent Cause we think we are obliged
to give it to give some Relief but it must be when
the sedative Powers are considerable & the Stimulus
small. as is the Case in Cancer. I dont think that
the temporary Relief compensates the Aggravation
of the Pains afterwards. It has noxious Effects also
that restrict it as it inebriates, weakens & disorders
the intellectual Functions: to this an Observation
of Dr Young's is to be applied that in Cancers it had
the Effect of doing this & encreasing the Pains at last.
The Cases in which Opium is indicated are in general.
1st Relating to the Functions of the Sensorium itself—
2d Encreased Motion from the Condition of the moving
Fibre itself in the Organs of Motion.
3d The Same in the moving Fibres employed in the
Excretions. As to the first I need not say that it is
excluded in Phrenitis & ordinary Delirium but I speak
of Mania where some speak of it as highly pernicious &
others as the only effectual Medicine we can Use. I
will compromise this & say that wherever there is full-
ness & frequency of Pulse & the Appearance of the

Delirium ferox it is improper but where there are
none of these or especially where they have been removd
I think a full Dose of Opium is greatly to be depended
upon & we should employ it so as to get its full sedative
Effects & manias require a very great one & from Ob-
-servation of ye Practitioners say on this I always
find the good Effect arise from it when it produces
sleep & given sometimes to the Quantity of gr XV or
the 24 Hours
2 Increased Motion from the moving fibre itself.
This includes Convulsion & Spasm & I observe that
whenever these continue for any length of Time they
are of Service as in Epileptic Fits we often find not time
to give them as we know in Tetanus.
The only Cases of these in wh we are restricted is
in the Case where there is Palsy or Fever.
In the first the Excitement is deminished by on
the other I have already spoke of.
It is of Use in the Repetition of such Disorders de-
pending on Atonia wh is not easily explained I re-
-served to say here that Opium when it takes off the

Excitement of the System may operate as Cold & give
a more firm excitement & a more durable Tension.
I think this probably occurs where the Stimulant
Sedative Powers concur tho of this I am uncertain
but of the first Operation of it should come in when
the Atonia should occur & of the Atonia comes on,
when the Sedative Power is passing off it may en-
crease the Disease as we sometimes find the Case
in Epilepsy where it is apt to induce Palsy unless
given at the exact Period when the Return should
happen, & is particularly pernicious when from a
permanent Cause.

9. Increased Action on the moving Fibres employed in
the various Excretions. We find that Opium can lessen
the Action of the Vessels & diminish the Secretions
but cannot be given when connected with Fever of
the excited State of the whole System as is the Case
of Sweating which so frequently & commonly at Large
suppressed by Opium & so commonly increased. A 2d
Case is where the Evacuation can only be thrown out

by That Excretion & When The Stimulus is accumu:
:lated as is the Case in morbid Matter in the Intes:
:tines as is the Case in the first Stage of Cholera
where there is so great a Quantity of Bile in the pri:
:me Vie. There is a Doubt when it should be
employed in Dysentery. I think this Disease
is always more or less founded on Fever & when
it is attended w^t Fever at the Time it is improper.
Again if it is considered as depending on Acrimony
in the Intestines. I imagine this should never
hinder its Use as it alleviates Pain, takes off the
spasmodic Constructions of the Intestines & I think
the Operation of Opium is very different from that
astringents as its Effects are more Transitory & it
does not while it cures Spasm stop the Peristaltic
Motion of the Guts or the Excretions from them. &
I imagine the common Source of Acrimony is the Change
of the Secretion of the mucous Glands of the Intestines
& I think it would even remove this as we find often in the

Case of Cough, where an acid Liquor is poured forth
by the Use of Opium it is retained & becomes more
bland. Besides this in Dysentery I think The spas:
:modic Constructions often retard the solid Parts of
the Faeces when The Mucus passes by Stool wh is
the Cause of Scybola & I think this is cured by the
Use of Opium. As suppressed Evacuation often
occurs from a Spasm in the Excretories & so Opium
may be a means of inducing suppressed Secretion as
well as restraining a superfluous Discharge.
Many People labouring under a nephritic Fit have
the Pain stop when it passes along the Course of the
Ureter tho no Stone is voided but a Strangury is ge:
nerally brought on which must be from The Stone
having found its Way to the neck of the Bladder
& proving a Stimulus. Opium given here allows
the Urine to be accumulated & often the Stone is passed
along with it. With regard to the stimulating Power
of Opium, it is clearly proved from Experiment & may
be used Wherever the exciting the sanguiferous System

is allowable & where we fear no Harm from its
sedative Power as we do in the Case of Palsy.
As a Cordial however I think its Use need becom:
tomed to those who are accustomed to it & so as we can
from the large Quantity gave at different Times.
This is rarely practised in this Country, but were
is used in its Place. It has been given to cure
Intermittents & its Effects ascribed to its Stimulus
but I rather think they are so from its Operating
Stomach & by that removing Spasm & I think its Use
to People called of a nervous Habit is to be ascribed
to this & I imagine is rather from its sedative than
next Effects ~

These are Medicines wch are designed to remove irregular Motions in ye Moving Fibres. It is a very difficult Indication as we are yet much in ye dark concerning the Cause of Spasm upon ye Acct of our knowing so little of ye Organization of Muscular Fibres. What I have to say therefore shall be delivered in a few words.

As Spasm consists in an Imp of Contraction. whatever removes this Fibres further apart will prove useful such as Heat & Moisture.

2dly In Spasms there may be a State of Immobility in the Nervous power

Antispasmodica

Every thing therefore wch recovers the
Mobility of the Nervous power will prove
Antispasmodic.

3:d Spasm often depends on an Over:
distending of Muscular Fibres. the Cause
of Inflammat:n can only be derived from
this. This by Congestion wch attends it
sufficiently prove. Blood letting removes
this. & thus proves Antispasmodic.

4:th Spasm depend upon Stimuli, acting on
particular parts. Whatever therefore
removes these will act as Antispasmo:
dic. such as all Sedative medicines. &

5:th Spasm arising from Cause 4:th Is often
cured by exciting a Stimulus in Another

part of the Body or by exciting some
Passion of the mind. May not this
ster Cautenies act in this way only?
6th Atonia often Lays y: Foundation for
Spasm. Astringents remove this
Atonia, & thus prove Antispasmodic,
either applied universally or topically
according to the Seat of the Atonia.
7th Spasm depending on Cause 6 are
cured by Stimulants especially when
it is Seated in the Alimentary Canal.
we prove their usefulness in these Cases
from Plates being discharged (which
always arises from Spasm) immediately
after the taking of Antispasmodics. The

Expulsion of Flatus is in some measure a Test of an Antispasmodic Medicine. all Antispasmodics you see them are reduced to Sedative & stimulating. the most powerful Antispasmodics are volatile oils such as the Empireumatic Ether - Camphor Musk Castor &c. which contain an Essential Oil on w: their virtue depends.

Alcohol proves Antispasmodic from its sedative Virtues. what is volatile Alkali? I am at a loss to determine which of ye two Classes it belongs to. most of Antispasmodics are a Combination of Sedative & Stimulat^g Qualities.

II. De Morbis Fluidorum.

The Pathology of ye Fluids is involved in great Darkness. I can therefore offer only a few Conjectures on them. They are of but little Consequence & are in general more or less connected w: ye Dependant upon the State of the Solids. we are acquainted w: but few Medicines that Operate on the Fluids primarily. I shall therefore discuss them shortly.

When the Fluids are too viscid Attenuating Medicines are indicated. But how is this Viscidity produced & in wch Cases does it take place? For my part I know no

proofs of Lentor in the blood. if it even
does exist it must be in ℥ Coagulable lymph
but we have no proofs of such a viscidity
even in this part of the blood. The
natural Consistence of the blood may
be loosned by water, but in ℥ Body
I doubt whether water ever acts in this
way, for it always runs off as soon
as ℥ poured into ℥ System according to w:
I said before. Neutral salts have been
supposed to thin the blood. but when a
salt superabound, in ℥ person it may
indeed a morbid Tendency of them, but
I believe salts never can be introduced
into the Body in sufficient quantities to
attenuate the blood. how absurd is it

Antimonia

To Sulphate ℥ij of Nitre given in 2 hours
for no Stomach can take more in that
time) can thin severall pounds of Blood.
Little of it mixes w: the Blood, but is
washed out as fast as it is taken in. Ignorant
Empirics Salts dissolves the Blood. This we
prove from ye Scurvy & Phænomena
attending it, but w: are ye Diseases w:
require such a Medicine? & who would
submit to take it in sufficient Quanti-
ties to produce such Effects? Soap
is said to dissolve the Blood, if it does
it must be by forming a Neutral
Salt w: ye Acid of the Stomach, for Soap
never enters into ye Blood in an unco-
pounded State. Alkaline Salts are the

Attenuantia

most powerful Attenuants we have,
but true are seldom introduced in
a sufficient Quantity to obtain ℔ Blood.
if they were they w.ᵈ be Precipitated like
℔ Soap in the Stomach. Hence I w.ᵈ Ob-
serve that many have Supposed ꝯ Attenu-
ants Dissolve Concretions in exentory Vessels,
such as the Stone in ꝯ Bladder. perhaps
℔ Alkaline Salts after being diffused may
℔ ℔
Regain be concentrated in ꝯ Urina: possa-
ges, & thus dissolve Stony Matters, but
we have no Reason to Suppose that
any Attenuants whatever can possibly
act on any Other Excretory Vessel in the
Body. Nay I Doubt whether there ever
was a Stone dissolved in the Bladder by

any Medicine whatever. We have often
seen several hundred pounds of Soda
Lime water taken to no purpose
in Cases of Stone, for altho' Relief has
seen Obtained yet dissections have
showed us the Stone presenting
Bladder as large as ever.

It is hard to tell when a Morbid Tenuity takes place in the Fluids. It occurs only in those Cases where all ye Functions are Obstructed as in ye Jaundy. Between here Inspissating Medicines can do nothing. The Cure of it must be attempted by Evacuations, & by such Aliment as wolve but little saline Matter, & afford a great deal of vivid Nourishment. all Vegetables are of this Nature & here their usefulness in the Leuvy. how far are Fish. the Amphibia. and young Flesh disposed to evolve saline Matter? are they apt to regenerate Animal Substances? I leave these Question to ye Investigation.

Demulcents are such Medicines as render
Acrimony innocent without destroying
it: This Indication is answered 1st By
Dilution. 2nd By Inviscating & covering
Acrimony. The most corrosive Acids we
see are rendered inactive by being
mixed w: a little Bil. all Demul:
ent Medicines are 1st Water. 2: Mucilage
& 3rd Bil. 1st Water not only dilutes
but carries off Acrimony from ye Fluids.
- I have read Instances of ye Venereal
Disease being cured by a plentiful use of Water,
but I am very doubtful of its Virtues
in Specific Acrimony
2nd Mucilages are much altered by ye

Demulcentia

assimilating powers, & therefore seldom
enter the Blood so as to produce any
Effects there. Vegetables especially of a
bland viscid nature evolve their saline
matter but slowly & therefore may
tend to obtund Acrimony in ye Blood in
a small Degree.

3:rd Oil. This never appear formally
in the Blood, nor can it act as an Oily
Demulcent in the Body. By evolving
its saline matters slowly it may
tend to give Fluids of a denser Consis-
tence. The Oil deposited in ye cellular
membrane is designed only to be absorbed
in Fever, when the Tendency of the
Fluids is to an acrid state. I have
no great Dependance upon it as a Demulcent.

Demulcentia

Fiji of bil taken in ℥ss in homo I am sure can do but little in Catarrhal and Desluxions. However much Physicians depend upon it.

Of Dementia

It is hard to condescend upon particu-
lar Ceremonies. Vegetables form a
great part of our Diet, & these are dis-
posed to Acidity from ye Nature & from
the Operation of the Stomach upon them,
but the System is provided wth powers
of Obviating it. Neither have we
any Reason to suppose an Alkaline
Ceremony ever present except in stag-
nating Fluids. I shall therefore pass over
every thing y^t relates to particular
Ceremonies, & proceed to speak of
ye 2nd thing proposed viz: of evacuating
Humors from the Body.

2°: Evacuare
A Humorem Unicum remisse.

Evacuations may be brót on

1: By a greater Quantity of Fluids being determined to a particular Organ.

2nd: By the Fluids being more or less prepared to part off by a particular Secretion.

3rd: By exciting the Action of y Secretory or Excretory Vessels.

1: The Determination of a greater Quantity of Fluids may be brót on by

2nd: increasing the Impetus of y Blood

& 2nd: by encreasing its Quantity. Secretions are seldom encreased by y first.

I know of none but Perspiration
th
w: are encreased by ye velocity of y^e:
Blood being encreased. The second
takes place w: Regard to any Function
th
in the System. They are always encrea-
sed in proportion to ye Quantity of
Fluids to them w: is always keeping
in order to bring about ye encrea-
sed Function we wish for.

2nd Functions are encreased by y^e:
Fluids being better prepared to frap
off by the Secretory Organs. It is hard
to speak confidently here. we know too
little of Secretions to be able to induce
Changes in their Natures. Wateren:
creases ye Secretion of Urine & Perspiration

by altering their Qualities, but w^h
are ye Substances w^h induce a change
on ye nature of the Saliva - Humas
Bile? ——

3^d By exciting the Action of Secretor-
-ory Organs. This is to be done
1st By inducing such a Condition of
the System w^h excites the Action of
Secretory Organs.
2nd By exciting the Action of Muscular
parts w^h press on Secretory Organs &
3^d by stimulating Substances applied
to the Secretory Organs themselves.
1st This takes place in ye Secretion of
Milk w^h is brought on in an encreased Quantity

by a particular state of ye uterus.
Bile too is encreased by Anger &
Veins by other Passions of y^e^ mind.
. As is Manner of exciting y^e^ func-
:tions is seldom in our power, nor can
it be reduced to certain Rules.
2nd: Muscular Fibres altho they lie
contiguous to Glands are not so easily
excited as we could wish. y^e^ Quan=
:tity of Saliva is indeed encreased by
Mastication. Perhaps the Operation
of Purges depends too only by their
encreasing the Peristaltic motion of
y^e^ Guts wch caused them to pour
out

a greater Quantity of $\frac{R}{y}$ Liquor seen
:ted by $\frac{R}{y}$ Glands of $\frac{R}{y}$ Intestines.

3:d The most powerful Method of
exciting the functions is by applying
Stimulating Substances to $\frac{R}{y}$ Secretory
Organs. & of this we shall speak chiefly.
- But this does not imply that
their are such things as Specific Stimu-
:li Altho' there may appear to be
some Foundation for their Operation.
- For 1:st Anatomy has not pointed
out any Different Conditions of Parti:
:cular Nerves w:ch we suppose to be
Specifically affected. 2:nd most Liquid
Substances affect all $\frac{R}{y}$ Glands alike.

Waumatica 1808

Purjeing- vomiting & the Diuretics

are excited by different Medicines only

in Consequence of their being applied more

or less primarily or in greater or less

Quantities.

I shall begin w: th: speaking of the

Functions of Mucus. this you know

Abounds all over the System but

more especially in the mouth & Fauces

& Bronchia. Emetics therefore are

indicated in all Cases of Obstructed Mu-

cus the worst Inflammation as well as in all

Congestion by neighboring parts such

as in the Head Ach. Tooth Ach &c-

- Opthalmia - Gutta Serena, Deafness

Is often in Comatose & paralytic Dis-
orders. The means of exciting Sneezing
are 1st warm Fomentation or the
Steams of warm water especially in
2d various Cases of Angina. 2d By
all kd variety of acrid Substances w:
encrease Secretions especially the mou
th
w: are most transitory & are
least liable to bring on Inflam:n
in Obstinate Head: Ache. Amaurosis
& the more violent Convulsions may be
used, for by encreasing the Quantity
of the Discharge, we alleviate very bad
Effects of this Stimulus.

We know of no Specific Inpecto:
:rants. Those Medicines w. move
Inpectorants are of such a Nature as
to stimulate the Stomach Guts &
Kidneys, & upon this Acct: we are
often disappointed of our Intentions in giving
them. the Discharge of the Medicines by
by vomiting or Stool may be obvia:
:ted by giving them in proper Doses &
at proper Intervals. Tobacco when
dried & boiled loses its vomiting & by
longer Drying its purgative Qualities &
at last becomes Diuretic & Inpecto:
:rant.

The Secretion viz:- of Saliva may be excited by an internal as well as external medicines. Mercury is the only medicine that answers this purpose. I shall therefore briefly enquire into its Modus Operandi.

It is supposed by some ꝯ: Mercury acted upon ꝯ Body chiefly from its weight. But this is a wrong Supposition & affects the most general proposition in Philosophy w: is that ꝯ Quality of Bodies are never changed by mechanical means, & therefore do not act mechanically upon Animals.

- If Mercury acted from its weight

its Effects would always bear some
Relation to its Fire, but this is not the
Case, for we find it proves more deob=
struent the finer it is made, nor do
we ever find it in the Blood formally
present. Its Combinations w: Salts
greatly alter its Operation. The more
Acid we add to it, the more we dimi=
nish its Gravity, but w: this, we en=
crease its Virulence in acting upon y Body.
Neither do y: Saline preparations of
y attenuate the Blood, but on the
contrary rather coagulate it, w:
shows that y Salt rather thins
y acts upon it. Besides the Blood
is never dissolved by y. It is never

introduced in sufficient Quantity
for this purpose. I have often
seen Blood drawn from Persons
under a Salivation w: its ordinary
healthy Appearance & sometimes w:
an Inflam: Crust.

2nd What determines Mercury to act
upon y: Salivary Glands? It does
not act Specifically upon them from
the Arguments we formerly used
on y: Specific Stimuli. 2: from its ac-
ting upon all the Secretions as well
as the Salivary such as y Gutts, Kidneys
& Skin. Hay we often find it acting
upon these when the Glands secreting

Saliva are not in the least affected.

- Mercury appears to be disposed
to associate wth the Matter of y^e Saliva.?
- Can thairdes we see are disposed
to unite wth y^e Matter of the Urine in
the same Manner. the Saliva ab=
-ounds wth an Ammoniacal Salt.
& hence we observe the Salivary
Glands chiefly affected in y^e Scurvy.
may not y^e Q have a Relation
to this Ammoniacal Salt of the
Saliva & may not this be the
Reason why the Salivary Glands
are affected in a Manner Analagous
to the Leuction in a Salivation?

Sialagoga

The Ammoniacal Salt we see when added to water makes it dissolve a double Quantity of ℔ Sublimate ℞ w: shows the Relation they have to one another.

Such Substances as act as a Sialagoga merely by stimulating the salivary glands in its passage into y Stomach.

℞ w: Cases is Salivation indicated? In all Cases where we would wish to induce an entire Change in the Fluids, or to evacuate Lurimony from the Serum of the Blood in ℞ w: it has its Seat. I do not imagine that it acts as an Antidote upon any Lurimony especially the venereal

timony. for 1st we have no Ana-
logy of it, nor Reason to believe it by
reasonings a priori. 2nd we never
find it cures the ven Disease wout
exciting a plentiful Evacuation.
3rd the more stimulating we render
it, the more successfully we use it.
Hence the Submission usefulness of
Solution of Corrosive Sublimate.
4th Many Substances wh we know
act only as Evacuants cure the
ven Disease such as y Guajacum &
many American Plants lately found
out by the Indians.
Superseding them Evacuations

The only way of the ℈ operating
when ii Salivation to be ordered?
I do not think it absolutely necessary
at any time. It exposes the Patient
to many Inconveniences. I have
seen it performed in an equally short
time by other Evacuations. However
when Salivation can be used
safely, I see no Disadvantage in it. It
may always be at ℈ option of the
Physician.

2d: Preparations of ℈ are best?
The mild ones. Hence a late
Author has proposed applying it only
in the Form of Unction. From Experience
I can recommend ℈ method. —

Diuretics

In wch cases are diuretics indicated?

1st When the blood abounds w^th
aqueous matter as in the Dropsy
of the Chest depends upon a Plenum of y^e Veins
2d When blood wch usually passes off by
the Kidneys. Vegetables are y^e best
diuretick for this purpose.

2d When water predominates in
the System. I have often said the
blood could not contain an ex=
traordinary Quantity of water, but
they are still useful when water
is stagnating or has been congested
as in the Dropsy in which a

vanity Function of Urine takes
place &c: perhaps originally
occasioned the Disease. But how
do Diuretics operate in Dropsies?
- there is a Correspondence between
secretion & absorption, & hydro-
-ting a watery Function we excite
the Action of absorption. in which
ner no One has yet said. but we
e Cure of the Fact. I have seen
Vomiting when continued for 24
hours cure an Anasarca.
3.d Diuretics are indicated when the
Urine is suppressed or when the

Urinary passages are obstructed,
unless the obstruction is of long Continu-
ance or very much fixed. These are the
chief Cases in w^h Diuretics are indica-
ted. Dr: Boerhaave says they are
useful after Concoction is finished
in Acute Diseases, but this is a
Doctrine I know Nothing about.
a Diuresis is brot on i^n 1° By
filling the Body wth watery Fluids.
2nd: By diminishing Perspiration wch we
know carries off 4/5 of our Fluids part
of the Blood.
3^d By inducing a sudden Constriction
of the urinary Excretories. Cold

contracts the Urinary Organs & excites
them in such a manner as to bring
an encreased function of Urine.
The best way of applying Cold is to y
Extremities especially y Feet.
Ex: By the Medicines w: are called
Diuretic. These are Saline Matters
by uniting w: y Serosity of our
Blood is more immediately disposed
to pass off thro the Kidneys. The
Acids are the least powerful Diuretics
the Muriatic w: is the most volatile
of any of y Fossile Acids is the most
Diuretic of any except the Vegeta:
ble. Alkaline Salts and more

Diuretics than the Carbonates especially the
fixed Alkalies. Neutral Salts act
as Diuretics if are not liable to
be changed in the Stomach. They
may be given in larger Quantities than
any of the other Salts. I believe no
substance acts as a Diuretic but such
as contain more or less of Saline
matter. all Vegetables which act
as Diuretics are of an acrid volatile
Nature.

I know of no Indication that it is
more difficult to answer than the one
we have been speaking of, as all
Diuretics have likewise the power

& stimulating the Stomach & Intestines.
We must therefore to render them
Diuretic either diminish their bole:
Diet or give them in small Doses.
They are apt to be so diffused that it
is necessary to give them pretty strong.
Some the use of Colchicum. Does
Combining Diuretics with Sedatives
Medicines make them answer the
better? — I cannot say it does
from my own Experience. —

In w^h Cases are Diaphoretics indica-
ted ? 1: When Perspiration is Obstru-
cted but it is hard to tell when this
takes place, or w^h Diseases it induces.
They are generally given in Catarrhs
Colds &c. But we have no proofs of
these depending on any acrid matter
being retained in the Body. I believe
they do Service chiefly by bringing on a
proper Determination to ye Skin.
2nd When an Acrimony prevails in
the System. Acrimonies are mostly
discharged by the Skin. This ye Exan-
themata sufficiently prove. I believe

1st In General Disease might be cured by plentiful Sweating. Diaphoretics are useful in all those Cases of Inflammatory where we see by Urine Skin is better disposed to Perspire by y Skin.

2nd When Water Abounds in y System. But they are not to be Safe as the Diuretics in these Cases tho' they Operate in y same way.

3rd When y Ballance of y Systems has been changed or when y Determinat to the Skin has been Obstructed. This is the Case in all Fevers, & hence y use of Diaphoretics in febrile Diseases.

But Diaphoretics should be used w:
great Caution here. The Skin often re-
mains long dry after y Exhibition of them,
& the Fever after the most profuse
Sweating.
5: When the Action of the System is
torpid. This happens in some Fevers
& in many comatose & paralytic
Diseases where we are sure there is
no Congestion in the Brain.

The Diaphoretic Medicines are
1: Water taken in large Quantities
2nd: Respiration & Sweat: may be excited
by all the various Means of exciting
the Sanguiferous System such as Exercise

internal Stimuli w: act only upon the Stomach & not directly on y Heart & Arteries.

3rd By exciting a Determination to y Skin. Heat joined w: Moisture acts upon this Indication best. Cold likewise answers this Intention as also Frictions.

4 By various Matter acting on the Body so as to relax the Surface of the Skin. Opium & all Sedative Medicines act in this way. Those Substances likewise w: act on y Stomach prove Diaphoretic such as cold Water Neutral Salts w: are Sedative & Refrigerant. Mettis acts in y same way. -

II In Morbis Fluidorum Indicationes

Curatoriæ Sunt

2.° A. Sanguinem ~~fac~~ evacuare per

Emenagoga.

The Uterus is evolved about Puberty.

the Manner of it you will easily

understand from w.: was said under

the Head of Nutrition concerning the

Doctrine of Evolution in general. the

Depletion of the uterine vessels leaves

them relaxed w.: ꝺ disposes them

to pour forth blood again after a

certain time has been allowed for

its Accumulation. this obliges us to

embrace the Doctrine of a partial Plethora

which indeed infers likewise the
Presence of a general Plethora which
goes no further than to give an exact
Fulness & proper Degree of Tension to
the whole System. Why does not Abstraction
check the Flow of the Menses?
Because their Flow does not depend
upon an Absolute Quantity of
Blood in the System, but upon a
Relative Quantity, & therefore
where Blood is drawn, the Ballance
between the Uterus &
the rest of the System is still kept up.
But again wherever Blood is
evacuated, there we see a Plethora

most apt to happen. Thus persons
who are subject to a Bleeding of the
Nose are troubled wth Congestions of
Blood in their Heads. in ye same
manner the Uterus from having
long discharged Blood gets a Habit
of accumulating it wch no Alteration
can destroy. But Further the
Discharge of the Menses is an Ac-
tive not a passive Evacuation. ..
When ye Uterine Vessels are filled
the wch Blood their Action is excited by
ye Stimulus of the Blood wch excites them
to discharge it. This you See connects it
the ye Nervous System, & Act^n in some
measure for its being periodical. —

Emenagogues are indicated
when this Flux is preternatural & hopt,
& in such Cases only. Pathologists
divide Obstructions of ye Menses
into 1st Imaginio Prensium ie;
when the Menses have never
yet flowed. 2: Obstructed Men-
ses ie when they have been
suppressed. Many Causes concur
in bringing on both these Cases
of Suppression. — they may all
be reduced to 1st want of Impulse in
the Blood in ye Uterine Vessels. 2nd:
a Torpor in the Uterine Vessels
wch renders them insensible to the

Stimulus of the Blood, or 3: to an
increased Resistance in y Uterus.
or The want of Impulse in y Blood
2 may depend upon a want of
Aliment or weak assimilating powers,
or plentiful Evacuations. I believe
these Causes Operate but rarely.
The Chlorosis may depend upon this:
Cause or rather upon the 2: nd viz: a
Torpor of the Uterine Vessels. The
3d: viz: Resistance in the Uterus may
be congenial, or arise from Ob:
struction by w: I mean a difficult
Transmission of Blood from a Fault
in the Blood itself, or from a

Constriction of the simple or moving fibres. I believe the Menses are never obstructed from a Fault in the blood, but by Constriction always when they are checked from accidental causes.

The means of promoting the Menses are 1: By restoring the Quantity of Blood by Aliment or strengthening the Animal powers.

2nd By encreasing the powers of the System in general by the Quality & Quantity of particular Foods —

Exercise & Cold Bathing. The
application of Heat especially in the
winter season has been known to
bring down the Menses. The power
of Electricity has done great Service
in Obstructions of the Menses. its
stimulus is confined chiefly to the
nervous system, & seldom acts
upon the Lymphiferous System. tonic
Medicines such as Chalybiates Barks &c
are of great Service in these Cases. The
more purely stimulating Medicines
do Service likewise. Mercury in
particular has often been em-
ployed with advantage in restoring the

Menstrual Flux. I have Some-
times seen Vomiting restore the
Menses. How does it act? Either
by stimulating the whole System or
by relaxing the Uterine Vessels
from stimulating the Stomach.
3d The Menses are restored
by determining the Blood to y Uterus:
Blood-Letting has long been used
for this purpose from y Derivation
of Revulsion. Out of this we shall
speak directly. Comprising the
Illias has been employed to
determine the Blood into y Uterine
Vessels, but I cannot say I have

Often seen it used w: success in
some Cases of Obstructed Menses from
obstinate Causes it may do Mischief.
by throwing the Blood into the
Aorta &c. Purges are useful to
answer this Indication. The lower
extremities sh? be excited by means
of Friction w: brings on a Determination
of Blood towards the Uterus. Bathing
the lower extremities has been much
recommended, & I believe it is a
most useful Remedy to derive to y?
Uterus. It rarefies the Fluids &
thus disposes to Hæmorrhage &
1?. By exciting the Action of

Uterine Defects. The most powerful
method of doing this is 1: by the
use of Venery. I refer you to the
Devines to determine when this Re:
medy must be recommended. 2:nd By
applying Stimulat: Substances to the
Vagina. They never enter y Cavity
of the Uterus. I have no great De:
pendance upon them. They cannot act
by their Heat, for nothing warmer y.
Uterus itself can be introduced into it
so as to relax it.

3:d Specific Stimuli have been propo:
sed to the Uterus. The fœtid Gums
& Plants have been subsoted to

act in this way. but I would choose
to refer their Operation to their
Antispasmodic virtues. Aloes proves
Emenagogue either by destroying the
Blood to Hemorrhage w: much
doubt except it is from y: Hemor-
rhoidal Vessels, & this it is done from
th passing unchanged thro y small
Guts, or it may move mucus
: gogue from stimulating the Rectum
th
w: we know is connected w: the
Uterus, or lastly it may act
merely as a Purge.
4: Warm Bathing is calculated

to answer this Indication when
used in the Form of ye Lenicinium. it
acts by taking off ye Resistance in
the Uterus. its Vertues then are chiefly
Antispasmodic.

# of Blood: letting.

Much Study & Attention has been
bestowed upon this Evacuation at all
times by Physicians. many Disputes
have been agitated concerning it: w:
indeed is a Reproach to our Dogmatic
Scheme of Physic. But this depends
upon our uphealing so much to
Experience w: is liable to such
great Fallacy, & that this throws
the Reproach upon Empiricism. I
shall avoid entering into the Dis:
putes concerning Blood. Letting, &
deliver you in a few words my
Sentiments upon it. 1: Then Blood.

Blood: Letting

Letting acts mostly as an Evacuant
& therefore its Effects will be Relative
to the Quantity of the Blood in the
Body. Authors differ about the Quan:
tity of the Fluids in the Body upon y^e
Supp: of some of them taking into their
computations the fluids wch ye Solids
yield by Chemical Analysis. I shall
confine myself only to the circulating
Fluids. or those only wch convey red
Blood. wch thing Drawn by Blood:
letting comes only from ye red Vessels
& its Effects will be confined to them,
or to that Blood only wch circulates
in the larger Vessels, for ye Blood

circulating in the Serous Vessels
is beyond the Reach of ye Discharge
& Blood-letting occasions. I believe
therefore that the Quantity of Blood
may be placed below 25 in a Man
of 120 weight. But again the Effects
of Blood-Letting will be diversified
by the Quantity of red Globules
drawn off. If you let them that Blood-
letting will occasion a considerable
Depletion in the Arterial System.
Hence
Some tell us that Depletion is very
transitory from Secretion being
decreased, & from liquid Aliment
being thrown in to the Body, but Experi-
ence

of these contribute to ye immediate
Regeneration of Blood. the last passes
off immediately by Urine or Perspiration.
the Coagulable Lymph & Red Globules
require a solid Aliment to reproduce
them, & this we know is seldom
given in those Cases, wch Blood. Letting
is indicated or Ordered. all this proves
tends to show that ye Quantity of Blood
drawn is much greater wch Regard to
the Rest of the System than has been
supposed.

The Effects then of Blood Letting are
on
1st a Diminution of the Tension of y^e^
Blood-vessels wch I told you before

depends upon a certain Degree of Tension
of these Vessels. The Tension of the
Muscular Fibres & Excitement of
the Sensorium you will naturally See
is closely connected with Fulness of
the Blood-Vessels, as their Action
depend upon a due Influx of
Blood into them. a Debility then
& some Degree of Atonia must al:
:ways succeed a Loss of Blood. If the
tonic power is too much encreased
from any Cause Blood Letting will
remove it, hence its great use in
Cases of Inflamm: & Diathesis.

The Vessels are always in a Stretched
State, & this will Ans^r for Dr Hales's
Experiment in w^h he found upon
puncturing an Artery in a living
Animal that the Blood had a
retrograde motion in both Arteries &
veins towards the Open Orifice. Ip
depends upon the Stretching powers
being taken off, & the Vessels reacting
on the Blood, — w^h causes it to run
towards that Part where the Tension
is removed i e the Orifice. —
This Doctrine overthrows the Notion of
Revulsion as the Ballance as of the
Systems will be restored immediately

after bleeding. The Doctrine of Revulsion first took its Rise from Physicians supposing the Arteries were rigid Canals, but later Experiments have taught us ye contrary. I conclude then y^t Blood-Letting acts only by Depletion. But this Depletion will always be more immediate & more conspicuous in particular parts than over the whole System Hence the use & Foundation of Topical Bleeding. Three in an Asthmatic taken from near ye half the Quantity of Blood will do more Service than three times ye Quantity taken from the Arm, unless it

depends upon a general Inflam:
Diathesis of the whole System, or has
induced such an Inflam:y Diathesis.

2nd: Other Circumstances attend Blood:
Letting besides Depletion. In Cases of
very great pain we often see it
Blood afford immediate Relief. This
depends upon y Tension of the System being
very exquisite, & uniformly connected
thro' all its parts, & w:ch makes it
sensible to the least Relative as
well as Absolute Depletion. This Relief
will be greater according to y Fulness of
the Stream of in w:ch it flows.

3.d Blood Letting will have Effects according to the Number of Vess:els in Action w:ch tend to keep up the Irritability of the System. hence y Foundation of Bleeding in a recum:bent Posture. The reason we are to Lying on our Backs. the Cephal:ic Vess:els are - & the Common Pulse. The Symptoms w:ch follow Bleeding delivered upon a Relaxation induced in the Arteries w:ch is communicated to the whole System. I have seen a hail young Fellow fall into a Lypothymy upon having a time Importune About the Size of a Pistole of the small Pox opened in his Forehead.

You will be easily led to apply
to what has been said to arterial & topical
Bleeding.

Blisters have been supposed to have
a very extensive Operation from a
motion wch has prevailed of Cantharides
entering the Blood & dissolving it.
But I deny their having any Effects
upon the Blood. for 1: they are never
used in sufficient Quantities for this
purpose. 2nd They act not only by rarefy-
:ating but they likewise create Inflam:
wch the Foundation of their Blistering.
so that Blisters are both Evacuants
& Stimulants. the Effects of Blisters
will vary according to the Difference of
the Constitution they are employ'd in.

Where there is little Irritability they
excite no Inflamm:n nor even quicken
the Pulse. In Constitutions of a contrary
Temperament they prove Stimulat: &
quicken the Pulse. 3: They relieve an
Inflamm:n in a particular part by
bringing an an Effusion of Serum
towards which the Inflamm: itself did not
naturally tend. This shows you their
usefulness in Rheumatism. By this
topical Evacuation it often takes off
a morbid Tension from the whole System,
but their Effects are always the more consi=
derable the nearer they are applied to a

particular parts. But still I think the
Function of the whole System of the
Skin may be greatly influenced by the
Application of Blisters to ~~the whole~~
any Part of the Body.

This is an Evacuation of matter in
the Form of Pus from late Discharges
it appears to be produced from serum,
the
very thoroughly impregnated w: Coagulable
Lymph. The Discharge then from Issues
may be considered as nearly pure Coa:
:gulable Lymph, & comes directly from
the Sanguiferous System. Its Effects
therefore are more considerable w:
Regard to the System than we would
discharged
suppose from the Quantity. They
drain off the Lymph faster than it is
supplied by Aliment. —

But again Jones allways keeps up
a topical Inflammn: for there can
be no Suppuration without Inflammn:
some
By this Operation they Obviate:
without Inflammn: & hence this useful
in the Phthisis Pulmonalis. If
the Body is affected with an Inflammn:
Diathesis while an Ulcer runs the
Inflammn: determin: is towards the
Ulcer & thus often prevents inter-
nal Inflammations. ——

This is a very large & intricate subject.
I shall first consider the general Effects,
& then will inform you to apply them in
particular Diseases

1st They evacuate the Contents of ye Stomach.
They often operate in this Manner,
when extraneous Matters are introduced
there, or morbific Matter formed there
by Error in Digestion or other Causes.
Too much Stress has been laid upon
the Evacuating Effects of Vomits from a
want of knowledge the Process of Digestion
& the Nature of the Fluids in ye Stomach.

2nd: Vomiting draws many Fluids into the Stomach wch were not there till the Vomit was given: & even goes so far as to invert the peristaltic motion of the Guts insomuch yt a Faeculent Juice & Bile are often thrown up by Vomiting. This leads us to view Vomiting in a more extensive manner yn we have hitherto done. Since know a Practitioner of Physic who used no other method of curing Dropsy but by frequent Exhibition of Vomits.

3d: Vomiting in Consequence of bringing the Fluids of the Guts into the Stomach generally acts as a Purge perhaps the Escape

of some part of ye Vomit over the Pylorus may
contribute to bring on the Purging.

4^ly. In vomiting the Contractions of the
Diaphragm & Abdominal muscles compresses
the abdominal viscera by wch means the
Course of the Blood is variously interrup-
-ted & relaxed. they act likewise as a
Stimulus to all ye viscera & operate on y^e
Liver - Kidneys - Urine &c. the Liver in
particular is very liable to a tor-
-pid Circulation & a stagnation of Blood.
- no Medicines are capable of reaching
it. Vomiting there acts immediately
upon it. It therefore shd be used very freely
in Diseases of the Liver. great Caution

Thy: be used in Diseases of the Kidneys especi: in Cases of Stone when they are very large.

In Obstructions of the Viscera the Consumption excited by vomiting. excites the vessels of the Viscera & thus often brings on a Flux of the Viscera. In Intermittent Fevers they have likewise been employed with success but not

- here I shall say no more.

5th They operate on the Thorax & promote a free Circulation of the blood thro' the Lungs. they cause the mucous Glands to emulge plentifully & thus remove the most useful Expectorants.

6th They relieve Congestions of the blood in the Head in particular Cases. But here they shd be used only at a certain period

of Life & under very particular
Restrictions.

7.th They quicken the Circulation all
over the Systems & thus prove very power-
-ful Sudorifics in Fevers & other Diseases
when Sweating is necessary.

8.th Vomiting is always attended w.th that
Anxiety we call Sickness w.ch has very
different Effects upon the Systems from
any thing we have said. Those Effects
depend upon the wonderful Connexion
w.ch is established between the Stomach
& the Rest of the Systems —

Robis

Cullensis
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